The Journal of

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VOL. 26 NOVEMBER, 1951 No. 6

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1. Byrne, R. V.: *Amer. Jour. Surg.*, 78:514, Oct., 1949.
2. Hicken, N. F., Stevenson, U. L., Franz, B.J., Crowder, Earl: *Amer. Jour. Surg.*, 78:347, Sept., 1949.

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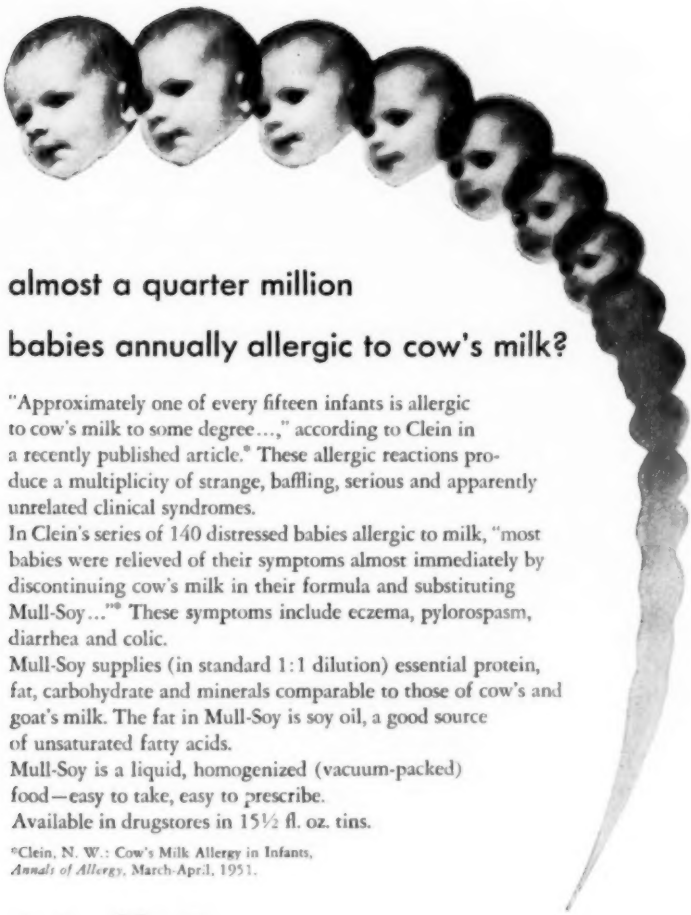

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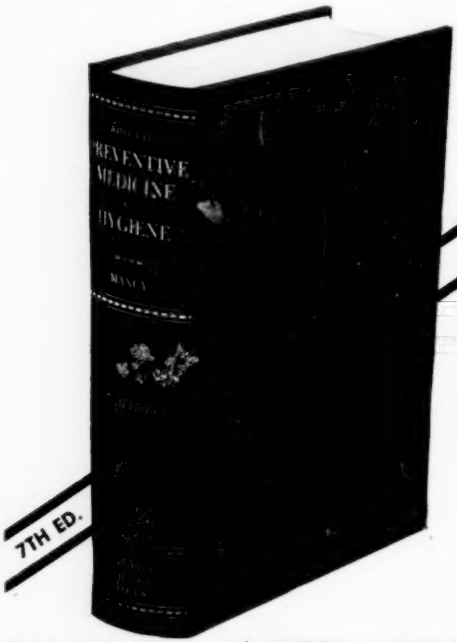

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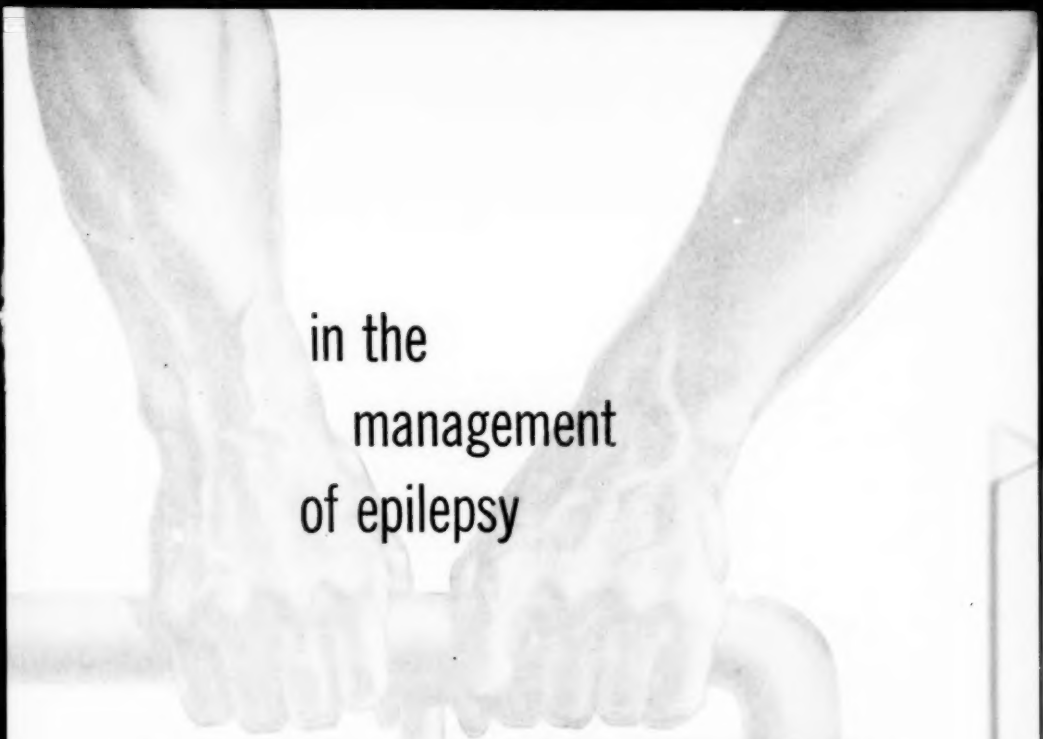

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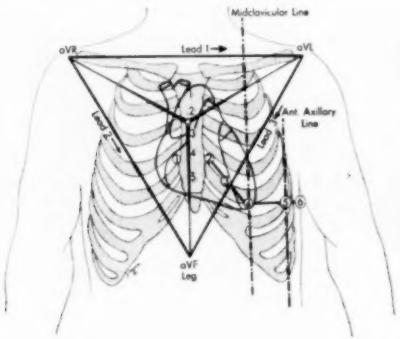

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Teaching Integrated Medicine

Report of a Five-Year Experiment at Peter Bent Brigham Hospital

Henry M. Fox

Assistant Professor of Psychiatry
Harvard Medical School

For the past five years, members of the staff of the Medical-Psychiatric Unit at Peter Bent Brigham Hospital have been conducting an experimental program designed to demonstrate that good medicine and good teaching are best accomplished by treating the person who is ill rather than the illness only.

In the spring of 1946 an experimental Medical-Psychiatric Unit was set up at the Peter Bent Brigham Hospital. During the 5 years of operation it has been a joint enterprise of the Department of Psychiatry and the Department of Medicine of the Harvard Medical School. It was established for the purpose of actually demonstrating the practice of integrated medicine. This term means the treatment of the patient who is ill rather than focusing exclusively on diseases of organs and cells. The following report describes the administrative pattern and the teaching content which, after some experimentation, was found to be most appropriate. Although this was somewhat influenced by the local hospital and medical school setting, it seems likely that much of this experience would be helpful to others who are interested in establishing similar projects.

Recent Army medical experience has accentuated the need for understanding patients in terms of their ability to function under conditions of service and afterwards. It has become very evident that physicians need much more preparation for meeting this challenge than most of them have received during their years of medical school and as house officers. Many thoughtful older physicians have become convinced that departmentalization and specialization in our medical schools and hospitals have proceeded at the expense of a more integrated consideration of patients. The general public has become uneasy about overly "scientific" medicine which seems to have displaced the trusted family physician.

The Peter Bent Brigham Hospital was selected for carrying out this experiment because it is primarily a teaching hospital. The senior members of the medical staff welcomed intimate collaboration with a psychiatric group and were prepared to participate actively themselves. Brigham is a general hospital with medical and surgical services but no psychiatric service. This disadvantage has to some extent been mitigated by the proximity of the Southard Clinic (the outpatient department of the Boston Psychopathic Hospital) where patients can be referred. In setting up the Medical-Psychiatric Unit, the temptation to provide a psychiatric outpatient department for the hospital was deliberately avoided in order to focus as much as possible on the patients who come to a general physician for help. Members of the Unit

From the Medical Clinic, Peter Bent Brigham Hospital, and the Department of Psychiatry, Harvard Medical School. This project was made possible by a grant from the Commonwealth Fund.

were given offices on the medical wards where they were easily available for consultation. The house officers were encouraged to retain clinical responsibility for their patients, to become more confident in their own ability to practice integrated medicine and to develop judgment concerning the relatively small percentage of patients whose treatment must necessarily be carried out by a psychiatric specialist.

Clinical Teaching Best

The most effective teaching was an outgrowth of clinical experiences shared with individual students and house officers. In order to establish an atmosphere in which these experiences could take place, it was necessary for the senior physicians to demonstrate their own active interest in the program. The advances in the fields of biochemistry and endocrinology during this period have, of course, been dazzling.

In spite of the rapidly increasing interest of medical house officers in personality problems, it would have been difficult to win their attention to the everyday needs that must be met in the handling of patients if the senior members of the medical staff had not made an active effort to restore a sense of proportion. The attitude of the medical staff members was made clear in comments concerning cases presented at Grand Rounds. Also the personal attendance of the Professor of Medicine at the weekly sessions of the Medical-Psychiatric Unit constituted a clear demonstration of his interest.

During the course of the past 5 years, the Unit has extended the teaching of integrated medicine to first, second, third and fourth year medical students, as well as to the various grades of house officers. The contacts with the senior physicians and surgeons have taken place in the more informal setting of shared clinical responsibility for their own patients on a consulting basis.

First Year Teaching

In order to practice integrated medicine effectively, it is necessary to be in possession of certain information concerning personality. The general physician needs at least a working knowledge of normal emotional development, and it soon became evident that this knowledge is so basic that it should be taught to medical students during the first year, at a time when they are also acquiring basic knowledge of anatomy, physiology and biochemistry. Since the Department of Psychiatry was in the process of making post-war revisions of the general teaching program, an opportunity was soon provided to make the first year course to medical students a coherent series of lectures on normal emotional development.

This course has now been given for 4 years in collaboration with Dr. Erich Lindemann of the Massachusetts General Hospital. It aims not only to provide a foundation for the subsequent instruction in psychopathology and clinical psychiatry but also to acquaint the student with the information which he will need as a basis for his professional relationship to all patients. The lectures include various examples of how external events may evoke a response in the individual that is characteristic of his reactions to previous events. Conscious influences are contrasted to unconscious forces, and illustrations are given of the way in which dreams and phantasies supplement the more overt activities of the individual. Personal crises, such as the birth of a new sibling or the loss of a parent, are used to illustrate how the individual adapts himself to the appearance or disappearance of persons important to him. De-

velopmental phases of childhood and adolescence are presented with special attention to the way in which emotional stress arises from the opposition between the progressive and regressive forces within the maturing individual. Clinical material is used to illustrate the way in which the relationship to the parents and siblings tends to be reenacted toward individuals outside the family who have a similar significance to the patient. Finally this process is presented as the basis for understanding the dynamics of the patient-physician relationship.

SEQUENCE OF LECTURES:

1. Relationship of *psychology* to the *natural* and *social sciences.*

2. *Anxiety* as a reaction to an overwhelming external threat to security contrasted to the development of anxiety as an expression of dangerous conflicts within the personality.

3. *Unconscious activity* illustrated by observations from hypnosis and the dream process. This is presented historically with particular emphasis on Freud's early discoveries.

4. *Bereavement* as an example of how a person reacts to severe emotional stress. Acute grief is presented as a definite syndrome with psychological and somatic symptoms.

5. *Childhood development* in the family setting. Description of various phases of psychosexual development during the first 5 years of life.

6. *Adolescence.* Process of emancipation from the family and establishment of sexual orientation.

7. *Vocation.* Influence of conscious and unconscious emotional attitudes on choice of vocation and on relationship to superiors, inferiors and associates.

8. *Marriage.* Influence of conscious and unconscious factors on choice of mate and marital adjustment.

9. *Ageing.* Relationship of physiological to psychological factors at the menopause. Psychological conflicts related to vocational retirement.

10. *Patient-physician relationship.* Conscious and unconscious influences on reaction of the physician to the patient as well as of the patient to the physician.

Although the lectures are crowded into the last 6 weeks of the school year, they have been well attended. Students inevitably apply what is said in a course like this to their own problems. The result is that some of them become somewhat anxious and there are always a few who become quite irritated. We have had the interesting experience of encountering some of these students again during their third and fourth years and have found that even those with the strongest initial resistance to psychological concepts may later become able to make effective use of this knowledge in their clinical work with patients.

Second Year Teaching

During their second year, students who are assigned to medicine at the Peter Bent Brigham Hospital are taught physical diagnosis. The psychiatrist has learned that instead of lecturing to this group it is better to lead a discussion, trying to bring out such matters as the potentiality for anxious dependence in any person sick enough to be admitted to the hospital and to indicate practical ways in which this anxiety can be allayed. There is usually an opportunity to discuss the feelings of the patient toward the physician. It is also possible to give some encouragement concerning his own hesitations about meeting patients for the first time.

When the students are learning the technique of inspection, auscultation, palpation and percussion of the body, they are also encouraged to acquire the principles and methods of interviewing. Observation of personality is offered as an antidote to the cliché of the "well-developed, well-nourished white male (or female)." The students are reminded of what they can learn by taking note of the patient's demeanor, the quality and content of his remarks and by noticing the various vegetative expressions of emotion, such as pulse rate, blood pressure or pupillary changes. Since the Departments of Medicine and Surgery have assigned some additional hours to the Department of

Psychiatry, it will be possible to expand the second year teaching considerably this year at the Peter Bent Brigham Hospital, as well as at the other Harvard teaching hospitals.

Third Year Teaching

Third year students are assigned to the Brigham for a period of 12 weeks (for medicine). They come in two groups of four to six each. The medical teaching program includes training in the taking of histories and the performance of physical examinations, followed by work with a series of patients for 1 week at a time. Each student thus sees from eight to ten patients during his 12 weeks on the Medical Service. The Medical-Psychiatric Unit participates in this program.

Each group of four to six students is given instruction concerning the methods and content of the personal history, stressing particularly the place of the patient in the family constellation. The students are reminded of the ways in which anxiety may disturb physiological function. The causes of anxiety are discussed in terms of personal insecurity and inner emotional conflict. They are encouraged to notice the way in which repeated interviews tend to establish the kind of a relationship which makes it possible for the patient to talk about his more personal feelings.

In addition to this general discussion, each student is assigned to a case selected by the Medical-Psychiatric Unit for the period of 1 week. The student is supervised by one of the psychiatrists. At the end of the week he has an individual conference during which the relationship of the patient's life history to his illness is discussed in detail. It has been found that the students are particularly receptive to this sort of instruction at a time when they are making their first responsible clinical contacts.

Fourth Year Teaching

The work with the fourth year students extends over a period of 2-3 months. There are usually six to eight students on the Medical Service at any one time. They are seen by the Staff of the Unit on two afternoons a week. On one of these afternoons the students meet for an informal seminar where there is an opportunity for them to present cases they are following and for the psychiatrist to draw upon his own consultation interviews to illustrate the way in which an understanding of the patient's deeper emotional conflicts can be utilized effectively during brief therapeutic contact.

During the course of the 5 years that the Unit has been in operation, we have learned to allow a good deal of flexibility in the conduct of these seminars. As the students begin to feel more at ease they are able to discuss with each other some of the practical aspects of the effect of the doctor's own attitude on the development of the relationship to the patient. Through discussions of this sort it has been possible to gain a much clearer view of the way in which the young physician's capacity for understanding and helping patients is influenced by his personal attitudes as well as by the specific educational process to which he has been exposed.

Outpatient Work Assigned

In addition to the seminar, each student spends an afternoon in the Outpatient Department. Here he is assigned to a new case for which he is expected to take full clinical responsibility. Patients with clearly established psychoses or psychoneuroses are referred elsewhere and the student is assigned whatever patient

happens to come into the general medical outpatient clinic that day. We are particularly interested in making sure that the student has the opportunity to integrate his understanding of the patient's life situation with his consideration of whatever structural disease may be present. After his introductory interview and examination of the patient, he has a joint conference with the internist, the psychiatric social worker and the psychiatrist in order to help him make the best possible plan for the patient's treatment. This team of consultants continues to be available for further guidance of the student during his subsequent interviews with the patient who usually returns for three or four further visits. The student is given assistance in shaping his treatment program in such a way that certain limited goals can be achieved within the available time. Occasionally the patient is referred to a psychiatric clinic for further treatment or is taken on for therapy by one of the senior members of the Unit. Thus the student gains experience in the best way to handle psychiatric referral as a part of his clinical responsibility.

Typical Cases

The clientele of any medical outpatient department includes a large proportion of patients who need personal understanding as well as physical examination. The last dozen patients who presented themselves constitutes a fair sample of what we have encountered over the course of the past 5 years. These patients were not selected for their psychiatric interest but illustrate the kinds of problems patients bring to the office of any practitioner of medicine.

1. A 43-year-old married woman complaining of pain over her heart for a year which comes on when using her arms in household work. She is afraid of heart disease, of which her father died. She had remarried 20 years after the death of her first husband. The marriage took place 2 years ago, immediately following the marriage of her 21-year-old son, who was her only child. The problem was one of determining whether she actually had angina, and, if so, to what extent emotional factors precipitated attacks.

2. A 23-year-old colored factory worker complaining of pain in the epigastric region of 2 months' duration. It began when his boss shifted him to a new job which has less prestige and where he gets less pay. His mother, with whom he had lived since her separation from his father when he was 7, died a year ago. He is a war veteran, he is married and has an 18-month-old son. Gastro-intestinal series demonstrated no evidence of ulcer. His symptoms improved after talking over his personal problems with the medical student and starting different work with a more friendly employer.

3. A 15-year-old schoolboy brought in by his mother because she is afraid that he sleeps too much and because she is concerned about his looking and acting older than his age. His mother was separated from his father 10 years ago. During the mother's conversation with the psychiatric social worker, it developed that she was frightened concerning her son's sexual development. She was also quite possessive and did not like to have him go out much. There was no evidence of organic disease, and the patient was apparently protecting himself from his mother's domination by a retreat into sleep and apathy.

4. A 63-year-old divorced janitor who passed a tarry stool yesterday and one-half cup of bright red blood this morning. History of rectal polyp and internal hemorrhoids. Drinks heavily and has enlarged liver. He has had 3 years of college training and speaks of having owned companies in Chicago and knowing many famous men on an intimate social basis. The student had no difficulty in planning for the diagnosis and treatment of the gastro-intestinal bleeding, but the patient's talk about his glamorous personal background puzzled him and he was deeply concerned with whether or not this was a fabrication. There was no evidence of organic brain disease. It developed that the patient's motive for embroidering on the story of his past glories arose largely from a feeling of loneliness and failure and a desire to win the doctor's personal interest.

5. A 16-year-old adopted girl who has felt "all tired out" since shift to new school where boys use "vile language." Has done poorly in school work. Mother disapproving of her dates, but at the same time encourages her to go out more than father permits. It was evident that the patient had hysterical fears concerning boys and that these fears which were long standing may not only have interfered with her ability to learn about sex but may very well have affected her general capacity to learn.

6. A 50-year-old married woman complaining of attacks of pain in the abdomen for 4-5 years. She had not married until she was 35 and has no children. Recent menstrual irregularities.

Both her parents died before she was 10. She was brought up by two aunts, both of whom died recently. Patient's blood pressure rises to 200/120 when excited. She was frightened at the prospect of pelvic examination and hastily departed when this phase of the examination was reached, explaining that she had to go home to her husband. She did not return to the clinic for any further appointments.

7. A 38-year-old cab driver who has been vomiting for 4 days. His wife is 7 years his senior. He was deferred from Army service because of "emotional instability." He is quite anxious and has a head tic. He reports that he squabbles and argues with his wife but does not like to fight and is evidently quite dependent on her. His symptoms apparently developed in the setting of a recent discussion with her. Gastro-intestinal series negative. He rapidly established a confiding relationship to the student and his symptoms disappeared.

8. A 13-year-old colored boy brought in by his mother for a "general check-up." Parents divorced when patient 5. Mother had "nervous breakdown" for which she was given shock treatment last summer. Patient feels hostile toward hospital, disgusted and bored. The mother was referred to the psychiatric social worker as her anxieties and emotional difficulties were evidently an important element in the situation.

9. A 54-year-old married woman who complains of "lack of ambition and laziness" for 6 years as well as aches in her joints. No evidence of organic disease. Onset of symptoms when oldest son whom she put through college came home from service. Nervous diarrhea 4 years ago at time he married. Good rapport quickly established. Patient evidently feels that the student is like a son and has felt better since talking with him.

10. A 64-year-old widow complaining of palpitations of the heart and "weak feelings" for 1½ years. Onset after breakfast and occasionally after lunch. Subtotal gastrectomy 2 years ago for ulcer. Apparently has dumping syndrome. Has felt "extremely nervous" since divorce from her second husband a few years ago, and she believes that the ulcer developed in that setting. She lives alone with her single sister about whom she "worries." Responded well to frequent small meals with high protein content and expressed very friendly feelings toward the student, preferring to take a diet he would prescribe rather than to accept referral to a female dietitian.

11. A 28-year-old married woman complaining of stiffness of the interphalangeal joints though nothing can be demonstrated on physical. She has "hot flashes" when arguing with her husband. Does not enjoy sex relations and describes herself as frigid. Gets pains in groin after intercourse. Husband had colitis and ulcers and cannot relax. Patient vomited throughout only pregnancy and is frightened of becoming pregnant again.

12. A 22-year-old married woman complaining of vomiting and loss of appetite since the birth of her third child. Knees "weak" and feels fatigued. Has fears of nervous breakdown. Fears she is pregnant now. Since birth of last child, she sleeps downstairs and husband upstairs. Describes husband as gloomy, fault-finding and critical. She never likes him to touch her. Terrified of pregnancy. It developed that her husband wants more children and that she has threatened to leave him.

Teaching of House Staff

At the beginning of the year a series of eight lectures is given to the entire medical house staff, including the resident, the assistant residents and the house officers. These lectures cover the following topics:

1. *Methods and goals of psychotherapy* as carried out by the general physician.
2. *Childhood* phases of emotional maturation.
3. *Adolescence* and emotional emancipation from the family.
4. *The hysterical character* as it is encountered on a general medical service (modification of the clinical picture by repression and the patient's utilization of hospital procedures and contacts with doctors to reinforce disturbing phantasies).
5. *The obsessive character* (use of compliance and "correct" behavior as a way of dealing with hostile impulses and the effect on the patient's response to any regime prescribed by the doctor).
6. *Bereavement, depression and suicide* (effect of pathological guilt feelings on health and dangerous effects of hostile impulses turned against the self).
7. Pathological use of *food, drink and drugs* (incorporation of these substances as manifestations of what may constitute a malignant regression to infantile dependent and destructive urges —e.g. alcoholism, addiction, and some of the obesity problems).
8. *Counter-transference* (unconscious attitudes of the doctor toward the patient—particularly overidentification with the patient as well as various ways in which the physician unconsciously devalues the patient because of his own feelings of insecurity).

Each medical house officer is assigned to the Outpatient Department for 2 months. During this time he has a daily joint conference with the internist in charge, the psychiatrist and the psychiatric social worker concerning the handling of his patients. In addition, each house officer has an interview a week with each of two senior psychiatrists*

*This teaching has been carried out by Dr. Arthur F. Valenstein and Dr. Gregory N. Rochlin of the Boston Psychoanalytic Institute.

who come to the Outpatient Department for tutorial supervision. This gives an opportunity for the house officers to follow certain patients for a series of interviews under experienced guidance. There has been special emphasis on the patient-physician relationship, and a detailed report of this experience will be given in a forthcoming communication.

Some Staff Problems

The house officers have responded with a good deal of interest to this unusual opportunity for personal supervision, and some have expressed certain difficulties they have noticed in the handling of their patients.

1. *Consciousness of youth and feeling of inadequacy.* One house officer explained that it was not easy for him to talk to a patient older than himself. He remarked that in the field of the emotions he feels very unsure of himself. He is conscious of his youthful appearance and reports that one patient in five comments on his being too young to be a doctor. He is afraid that patients will consider him incompetent and inadequate. This had come out particularly in connection with his difficulty in talking to a woman who had problems connected with sexual frigidity. His patients somehow did not seem to come back after a talk with him, and he wondered whether he might have frightened them away.

2. *Need for patient to respond to therapy.* Another house officer described all his patients as unspontaneous and inclined to say little without direct questioning. The material that he reported about them included no emotional content. He explained that he himself grew up in an atmosphere where emotions were never expressed and that neither of his parents talks very much. When a patient demands specific examinations or tests he becomes anxious, and he feels that he becomes overly disturbed if anyone complains that he has not received adequate treatment. He, too, feels that he is a very young doctor and finds that as soon as a patient shows some response and improves at all he has a feeling of security and is able to do much better.

3. *Dislike of intense emotion.* A third type of problem was illustrated by a house officer who had difficulty in the interview with his patient because he was unable to wait in silence. "I would go into a panic to do that." He was aware of having great difficulty in handling patients who showed any extremes of behavior. He explained after a while that he had been brought up never to express feelings and had been particularly embarrassed by a sister who had temper tantrums in public. He reported a tendency to exhort his patients to accept their limitations and feels that he becomes excessively irritated by any who whine or complain.

4. *Overidentification with patient.* During a teaching session one house officer seemed to have great difficulty in describing an older woman. He suddenly burst out with the statement that he finds himself immediately hostile to patients who have the kind of dominating aggressive manner which this patient exhibited. He further explained that he resents driving aggressive people and feels strongly sympathetic to the underdog. He likes to work with patients who have difficulties like his own. Although this led to his trying to make as sure as possible that he gave his patients their money's worth, he tended to devalue his own capacity to be of help. His overidentification proved to be rather disadvantageous on one occasion, for instance, when he was unable to prescribe a necessary diet, explaining "I would not be able to put myself on one."

5. *Personal questioning felt as an attack.* A very conscientious house officer was worried about asking patients any personal questions and seemed to feel that this was much too aggressive. He later confessed that his own policy is to tell a person as little as he can about himself, feeling that then no one will be in a position to make use of any information to hurt him.

These examples illustrate the range of problems encountered in the doctor's own feelings about his patients. The uneasiness of many of the house officers in certain situations was undoubtedly accentuated by actual youth and comparative inexperience, but by and large their difficulties were not very different from those of any other professional person who has to deal in an intimate way with another human being. The teaching aim was to give the house officer an opportunity actually to experience and to become more fully aware of the way in which his own feelings enter into the treatment situation. The house officers were encouraged to accept these feelings in themselves, and some of them found it a little easier to respond with friendliness and objectivity to the problems of their patients.

Unit Personnel

The staff of the Unit includes three full-time psychiatrists, a full-time Fellow in psychiatry (on a U. S. Public Health

training grant), a psychiatric social worker, and a secretary. In addition there are the two visiting psychiatrists who each come in for weekly tutorial sessions with the house staff, as has been described. It early became evident that this kind of teaching cannot be done effectively without a minimum of 3 or 4 years of psychiatric training. To be in a position to help the general physician who has not had specialized psychiatric training it is necessary to have a solid background in general medicine plus a good deal of clinical psychiatric experience. Psychoanalytic training is helpful for various reasons but especially because anyone who has himself been on the patient's side of a psychotherapeutic relationship acquires a particularly vivid knowledge of the way in which the interpersonal forces operate.

Research

The principal research of the Unit has consisted in trying out various methods of teaching in the general hospital setting. An organized series of lectures, fully illustrated by patients seen on the medical or surgical wards or in the general Outpatient Department, in conjunction with individual supervision of the student or house officer while he is in the process of meeting actual clinical responsibilities was found to work out the most effectively. At the same time there has been an opportunity for the members of the Unit to develop treatment methods appropriate for the general physician and to clarify the goals that can be achieved by anyone who practices integrated medicine without specialized psychiatric training. On the other hand, it has become very evident that many of the patients who have serious vegetative disturbances (such as colitis, arthritis, hypertension, or anorexia nervosa) need psychotherapy that can only be carried out by a thoroughly trained specialist. The observations made during the course of such treatment contribute to the understanding and elucidation of these conditions. The recent advances in endocrinology offer challenging opportunities for research collaboration.

Discussion

It is generally agreed that the working atmosphere at the Hospital has definitely altered from what it was at the time the Unit began to operate. Although discussions at Grand Rounds are still largely oriented to diseases rather than to patients, biographical facts are now accorded scientific rather than merely anecdotal consideration. This change in the intellectual climate is, however, a general trend of the times and can only be partially attributed to the teaching influence of the Medical-Psychiatric Unit. But perhaps any statistical appraisal of what has been accomplished for the patients at the hospital, or for the doctors who are treating them, is less relevant than the contribution which has been made to a clearer recognition of the kind of help the average patient needs and the demonstration of some of the ways doctors can learn to give this help more effectively.

Summary

1. An experimental Medical-Psychiatric Unit established to demonstrate the practice of integrated medicine has now been in operation at the Peter Bent Brigham Hospital for 5 years. The administrative pattern and the teaching content found to be most appropriate are likely to be helpful to others who are interested in establishing a similar project.

2. Teaching activities of the Unit have been extended to include first, sec-

ond, third and fourth year medical students as well as the various grades of medical house officers.

3. A course in normal emotional development has now been given to the first year class of the Harvard Medical School for 4 years.

4. Second, third and fourth year medical students are given instruction by the members of the Medical-Psychiatric Unit during the period of their assignment to the medical wards and to the medical Outpatient Department of the Hospital.

5. Medical house officers are given psychological information in the form of clinically illustrated lectures, and each man is given individual tutorial supervision by senior psychiatrists in the medical Outpatient Department. The teaching aim is to provide an opportunity actually to experience the way in which his own feelings enter into the treatment of his patients.

6. Selection of teaching personnel, research opportunities and teaching results are discussed.

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A Private Outpatient Clinic in a University Hospital

Its Role in the Teaching Program of the Department of Medicine

Palmer H. Futcher

In 1946 a Private Outpatient Clinic was instituted at Johns Hopkins. The program is the nearest thing to private practice within the University. It provides Fellows in medicine and young practitioners the opportunity to gain valuable experience under the most competent physicians on the Johns Hopkins staff.

The training of physicians after graduation from medical school has long been a function of hospitals. Thus, interns and various categories of residents carry part of the responsibility for the care of inpatients. The experience gained has constituted a very important part of the education of many of the physicians in America today.

After the internship year, young physicians often find difficulty in obtaining further, well supervised, clinical training. The competition for the limited number of residencies in teaching hospitals is great. Hence, in order to increase the opportunities for postgraduate instruction, many hospitals have instituted training programs utilizing their public (or "free") outpatient as well as their inpatient facilities. The clinical material available for outpatient teaching more closely resembles that encountered in office practice than the material observed on hospital wards. A period of service in an outpatient department offers to a young physician opportunities which he will not encounter in dealing with the often highly selected patients on a hospital ward.

In 1946, Dr. James Bordley III, then of the Department of Medicine, instituted a postgraduate training program at Johns Hopkins Hospital employing as clinical material private ambulatory patients. Since that time, the program has expanded moderately. The whole senior teaching staff of the Department of Medicine has assisted in its development, as have the physicians under instruction. The contributions of Dr. Bordley and Dr. Russell A. Nelson have been particularly important. The successive Administrative Assistants of the Director of the Hospital have been most helpful.

In other institutions, the care of private ambulatory patients has long served as the basis for a teaching program. Further, there is, of course, no fundamental difference between the instruction of physicians using private patients as clinical material and the more familiar technique of using "dispensary" patients. However, there may be some interest in this early progress report

From the Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland. Presented at the Annual Meeting of the Association of American Medical Colleges held at Lake Placid Club, New York, October 23-25, 1950.

on one approach to coordinating a private ambulatory patient teaching program into the specific setting of the Johns Hopkins Hospital.

Background of the Program

For many years, patients of relatively comfortable means, most of them residing outside Maryland, have applied to the Director of the Johns Hopkins Hospital for conduct of a medical survey. There being no facilities for examination of private ambulatory patients within the hospital, these patients were at one time referred to practicing physicians on the hospital staff, who examined them in their private offices or admitted them to a hospital bed. These patients now provide, in large part, the clinical material utilized in the teaching program to be described, instituted in 1946 and expanded to its present status in 1948. Space has been provided in the outpatient department for the care of these patients. The responsibility for administration of this Private Outpatient Clinic is a Hospital function. The professional staff is appointed by the Hospital after consultation with the medical school faculty. The long standing coordination of hospital and medical school facilitates this arrangement.

Considerations leading to the institution of this Clinic were presented in 1946 by Dr. E. Cowles Andrus[1] after a survey in which he played an important part; they are not fully recapitulated here. The patient is afforded the satisfaction of having his examination conducted in the buildings of the institution to which he applied for care; it is hoped that thereby the public relations of the Hospital will be improved. The examination of these patients is supervised largely by the same practicing physicians who were caring for this type of patient before the Hospital's private outpatient facilities existed. Many patients who formerly would have required admission to a Hospital bed in order to obtain access to special facilities can now be examined in the Clinic; hence, the currently limited supply of beds becomes less critical, and it is not necessary for the patient to pay for hospitalization. The Hospital gains experience in the administrative aspects of the care of ambulatory patients. The laboratory and x-ray fees paid by these patients help defray the costs incurred in the administration of the Clinic. And, most important for the subject of this paper, these private patients supply useful material for the training of young physicians.

Organization of Teaching Program

Department Participation: Several of the clinical departments of the Hospital and Medical School use private ambulatory patients as a source of teaching material. The Department of Medicine's program is probably the most extensive, and will serve as the basis for the information which follows.

Clinical Material: Adult ambulatory private patients coming to the Hospital for diagnostic study are the subjects. A small proportion of the patients, including the executives of local industrial concerns which have arrangements with the Hospital for annual physical examinations, are residents of Maryland. The great majority of the patients are from other states. Hence,

1. ANDRUS, E. C.: *Private Clinics in Medical Schools:* J. A. Am. M. Coll. 22:77-81, March '47.

the medical study amounts usually to a diagnostic evaluation; recommendations for treatment are forwarded to the patient's home physician, who supervises the subsequent course of the patient's illness. The Clinic is so staffed that a maximum of about 30 new patients can be handled in the teaching program weekly. Rarely is it necessary to admit a patient to a hospital bed.

Professional Personnel: General: The Medical Consultants and the Junior Physicians comprise the two categories of medical personnel. The senior group is ultimately responsible for the adequacy of the medical study. On the Junior Physician, however, falls the duty of directly supervising the patients throughout their examination. These two groups of physicians are representatives of the University's Department of Medicine. The patient is billed in the name of that department for their services. The physicians are, in turn, paid by the Department of Medicine.

Professional Personnel: Junior Physicians: This group, which comprises the physicians who are under instruction in the clinic, is subdivided into two categories, Fellows and Junior Practitioners.

The Fellowship category includes physicians who, on the average, have completed an internship and one or two years of a hospital assistant residency on a medical service. These physicians usually plan to enter the practice of medicine. They carry the greater part of the general medical load of the Clinic and are occupied during the morning and often part of an afternoon, examining one new patient daily. Afternoons are also spent in public outpatient specialty clinics of their own choosing and at teaching conferences arranged by the Department of Medicine. Weekly meetings are held with the Physician-in-Charge of the Clinic and, during part of the year, with a member of the Medical School staff qualified to give instruction in psychiatric aspects of internal medicine. Most of the Fellows assist for two months in the teaching of physical diagnosis to the second year class of medical students. Some of the group have devoted part of their afternoons to a research problem. They are currently paid a yearly stipend of $2,400.00 by the Department of Medicine. Four or five Fellows are usually under instruction in the Clinic.

The Junior Practitioner category is composed of young physicians who have recently entered the private practice of medicine in Baltimore. Not yet granted hospital bed privileges, they desire an association with the hospital which will provide instruction and some economic reward. These men devote approximately two mornings a week to the Private Patient Clinic, examining one new patient at each session. Other mornings they devote to the public dispensary. They are paid by the Department of Medicine a stipend for each patient they examine.

Professional Personnel: Medical Consultants: The group of Medical Consultants includes the 20 most experienced and proficient internists on the Medical School Staff. They are men who engage in private practice and also participate in the teaching of third and fourth year medical students. In rotation these men act for 2 months as Medical Consultants in the Private Outpatient Clinic and supervise the majority of the patients who are examined

under the program. The remaining patients are supervised by the one or two full time members of the Department of Medicine who work in the Clinic.

The four or five Medical Consultants serving during one teaching quarter in the Private Outpatient Clinic supervise the initial examination of two "new" patients during each of their three morning visits each week, and review the findings on one or two patients who have completed their study. Each visit occupies from one to two and one-half hours. The Department of Medicine pays the Medical Consultant each month, the stipend being directly proportional to the number of sessions during which he was in attendance.

The author acts as a Medical Consultant and is a full time member of the Department of Medicine with the rank of Associate Professor. I devote essentially all my time to the Clinic and act as Physician-in-charge. My personal interests relate particularly to the teaching and practice of clinical medicine and to the improved organization of medical care. I see that the Clinic's professional staff is sufficient, confer regularly with Fellows under instruction, and act as liaison with the administrative staff. My salary is paid by the Department of Medicine from medical fees collected from patients.

Routine of Clinical Study: A Junior Physician is assigned one new patient each morning. During the course of an hour and one-half, he records the patient's history and performs a complete physical examination. Later the same morning he presents his findings to a Medical Consultant, who examines the patient and then reviews the plans of the Junior Physician for special consultations, laboratory, and x-ray studies. Both physicians record their findings. The Medical Consultant then performs the same function with one other Junior Physician, so that he examines two new patients the same morning.

During the course of succeeding days, the Junior Physician maintains contact with the patient, conducting further interviews, if necessary. He has an opportunity to observe the examination of the patient by the special consultants in other fields. At the close of the study, he prepares a list of the diagnoses. During the final morning of the patient's study, these diagnoses are reviewed with the original Medical Consultant, treatment is discussed, and the recommendations are presented to the patient by the two physicians. The degree of responsibility for the conduct of the final interview delegated by the Medical Consultant to the Junior Physician varies from patient to patient. A final case summary, presenting the diagnoses and recommended treatment, is written by the Junior Physician, who subsequently forwards the full report of the study to the patient's doctor at home. Before transmittal, the report is reviewed by the Clinic's Physician-in-charge.

Evaluation of the Program

Coordination With Other Activities of the Department of Medicine: The physicians acting as Medical Consultants in the Clinic are in demand for other teaching functions, such as the instruction of third and fourth year medical students. The institution of the Clinic may have caused some of the Consultants to devote less time to the teaching of third year students in the public

dispensary. The consequent impairment of the quality of teaching which these students receive is difficult to quantitate, but may be appreciable. The Department occasionally has found it useful to enable a clinically qualified member of its research staff to contribute toward his salary by acting as a Consultant in the Clinic's teaching program.

The clinical duties of Fellows in the Clinic will allow a young physician to devote approximately one-third of his daytime hours to research, if he so chooses. Such an allocation of his time would preclude participation in most of the afternoon public outpatient specialty clinics; hence, few Fellows have engaged in extensive investigation. The Fellowship in the Clinic has, however, brought to the Hospital an occasional Fellow who subsequently has chosen to remain for one or more additional years as a full time participant in the research activities of the Department of Medicine.

Administrative Loan on Physician-in-Charge: The selection of new Fellows each year from among many applicants to a university hospital for instruction, and the supervision of the special clinical and research activities of the Fellows selected, consumes some of the time of the Physician-in-charge. Editing of reports to home physicians prepared by Junior Physicians, and liaison functions between the Clinic's professional, laboratory and administrative staff are other necessary duties. Efforts allocated to coordination of the Clinic visiting schedules of the part time consultants so that there is a minimum of interference with other commitments made by those physicians further reduces the time remaining to the Physician-in-charge for clinical pursuits. These administrative duties, plus Medical School and Hospital committee assignments, the direction of the routine clinical activities of two Junior Physicians four or five mornings a week, and the personal supervision of occasional additional patients occupy essentially the full time of the Physician-in-charge.

Financial Return to the Department of Medicine and Hospital: Information on the cost of operation of the Clinic is at present available only for the year 1948-1949. The total of the sums received for laboratory and x-ray services and for professional care would appear to be sufficient to defray the operating costs of the Clinic, to contribute reasonably to the amortization of expenses incurred by the remodelling of the Clinic area, and to pay the Junior Physicians and Medical Consultants stipends commensurate with standards of reward now current in the vicinity of Baltimore.

Evaluation by Patients: Patients have, in general, been pleased with their handling in the Clinic. They, as a rule, establish good rapport with the Junior Physician, whom they often regard as the physician in charge of their case. Thus, they usually address correspondence after leaving the Clinic to the Junior Physician. The Junior Physician's schedule is less full than that of the senior staff, and it is possible for him to devote considerable time to those patients presenting complicated problems. His availability lends a degree of individuality to the manner in which patients are handled which could not otherwise

be achieved without increasing the time devoted to the Clinic by more senior personnel.

Patients have occasionally been caused some inconvenience due to the fact that the hospital's previous experience with outpatients has been largely limited to the public dispensary care of residents of Baltimore. With the latter type of patient there has not been the same necessity for emphasis on expeditious scheduling and undelayed reporting of the diagnostic study. These defects, while they still persist, have become less pronounced as the hospital's experience with private ambulatory patients has increased.

Various factors, such as the national economic cycle, influence the number of patients applying to a pay clinic. Hence, it is difficult to utilize variations in the number of patients attending the Clinic as an indication of the opinion of patients or of referring physicians as to the excellence of the care supplied. There was no important increase in the number of new patients applying to the Clinic in 1949-1950 as compared with 1948-1949. During the late winter, when the patient load is lightest, there was insufficient clinical material to occupy the Junior Physicians completely. No effort has been made to spread information widely on the existence of the Clinic.

Evaluation by Medical Consultants: The Medical Consultants find that the Clinic usually provides them with an opportunity to see patients in a pleasant, supervisory manner. The chance to instruct a younger physician while simultaneously performing a service to a patient is a source of satisfaction. Medical Consultants not infrequently encounter the inconvenience of returning to the Clinic on a morning for which they are not regularly scheduled and on which they receive no stipend from the Department of Medicine, in order to conduct a final interview with a patient who must leave the Clinic before the Consultant's next scheduled visit. Sometimes, the conduct of a final interview must be unduly hurried, coming as it may at the end of a morning devoted to examining two new patients.

Evaluation by Junior Physicians: The clinical material available for study includes a predominance of patients with functional complaints or with chronic or subacute diseases. Hence, the patients are more representative of those encountered in office practice than those encountered on the teaching wards of a university hospital. Rarely does an acutely ill patient present himself.

Since most of the patients seen in the Clinic are from other states, the opportunities for prolonged observation are limited. The Clinic is essentially diagnostic in its function, rather than oriented to long term patient care. It is, hence, difficult for the staff to ascertain the ultimate correctness of diagnoses or to determine whether the recommended therapy has proved of value. Similarly, patients with functional illnesses requiring treatment by repeated interviews over several months usually cannot be followed. The occasional residents of Baltimore who are seen in the Clinic can, of course, be studied by the Junior Physicians in more satisfactory detail.

In this regard, the opportunity for Fellows to assist in the specialty public

outpatient clinics in the afternoon also has been valuable, because the patients seen there can often be followed throughout their illness. Simultaneously, special experience is gained in psychosomatic, endocrine, allergic and cardio-respiratory diseases.

In reviewing the benefits accruing to those under instruction, it may be said that the amount of formal teaching which the Medical Consultants offer the Junior Physicians is variable, owing to the occasional pressure of time. But the intimate association with the Medical School's most able practicing internists during their examination of the patient is an extraordinarily valuable one to the group under instruction. Sometimes, for the first time in his medical training, the Junior Physician finds himself in close contact with instructors who are familiar with effective techniques of assaying the interplay between disease processes and personality. He can profit from participation with the instructor in the presentation to the patient of a broad therapeutic program bearing on the many factors which influence the patient's welfare. An often new, or more realistic and more sympathetic appreciation of the problems of the average patient is acquired, along with finesse in conducting the study of patients who are not medically indigent. The young physician is guided in the effective use of consultants in special fields, and is supervised in the development of the consultants' reports and those of the laboratories into a coordinated series of recommendations to the patient and a concise written summary for the physician at home. The program of prescribed duties is light enough to allow opportunity for the young physician to devote ample time to patients requiring unusual attention and to gain experience in special fields of his own choosing. Finally, those in training have constantly available the opportunity for conference with the Physician-in-charge of the program, one of whose major interests is their development into competent clinicians. I believe that these acquisitions and influences are very valuable preparation for the practice of medicine.

Plans for the Future: Consideration is being given to improvement of the teaching program by introduction of a system of reporting to those under instruction the subsequent course of patients after discharge from the Clinic. Plans for more expeditious methods of conducting the study of the patient and the reporting of the findings to the referring physician are being laid. To what extent the increased demands of the Armed Services for young physicians will interfere with the staffing of the Clinic by properly qualified Fellows remains to be seen. This latter consideration, and the opinion of the policy makers of the Johns Hopkins medical institutions as to how the interests of the Medical School and Hospital can be served best, will govern any decision as to expansion of the Clinic in its present form.

SUMMARY

For several years postgraduate teaching has been conducted by the Department of Medicine of a university hospital, employing ambulatory private patients as clinical material. While certain aspects of the program are not entirely satisfactory, on the whole it has been regarded as very successful.

Programs to Provide More Physicians

Joseph E. Markee
Jerome S. Harris
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The authors are convinced that medical schools must increase the output of quality trained graduates and that the way to do this is to utilize all available facilities. They call for a compulsory four-quarter school year of forty-four weeks, with admissions every January and July.

The public and many of the medical profession have finally recognized that this country needs more physicians, especially in rural general practice.[1] There is some controversy, however, as to whether the increase in the annual number of graduates should be 25% or 50% by 1960.[2] At any rate, as shown in the Table, though the total number of physicians and medical students has kept pace with the growth in population, the number of physicians in private practice, especially general practice, is inadequate. Furthermore, Blue Cross and other prepayment medical insurance plans, prosperity and the education of the public to the need for better medical care have increased the demand for physicians far more than has the growth of population. If enough physicians are available, the law of supply and demand will take care of their distribution. How can the numbers be increased? The medical schools, both privately endowed[3] and State supported, require more income to maintain their present standards, not to mention their needs for improvement or expansion. Those schools which maintain teaching hospitals are in an especially precarious position because the per diem

CHANGES IN THE PHYSICIAN-POPULATION RATIO, 1940-1950
(Courtesy of G. St. J. Perrott)

Category	*1940*	*1950*	*% Change*
Total Physicians	175,146	201,277	+15
Physicians in Private Practice	142,922	150,417	+5
General Practitioners	109,255	95,526	−13
Total Medical Students	21,271	25,103	+18
First Year Medical Students	5,794	7,042	+22
Graduating Medical Class	5,097	5,553	+9
Population	131,669,275	151,400,000*	+15

*Estimated 1 July 1950, exclusive of the Armed Forces overseas.

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costs are rising faster than the collections from patients.* Tuition fees and hospital charges have been raised to the limit, and further increases will penalize the students and patients.

More Funds Essential

Therefore, additional funds will be required if more medical students are to be admitted. These funds will be needed primarily to train additional instructors, secondarily to provide additional facilities and equipment, and last but not least, for operating expenses.

The money, faculty and buildings needed to establish entirely new medical schools make them impractical. However, if some additional private, State or Federal funds can be obtained, the number of physicians can be increased in at least two ways: (a) by the expansion of *teaching space* in the existing medical schools (through additions to the present buildings or the construction of new ones), or (b) by the expansion of *teaching time* (through the utilization of the summers so that the present buildings can be used to capacity for the full year).

(a) *Expansion of teaching space:* In spite of the popular opinion that the medical schools and the AMA are restricting the number of medical students to a minimum for selfish reasons, the 79 American schools are filled to capacity. Obviously, the easiest way to expand would be to make sizable additions to the present buildings to provide teaching, laboratory and office space for the increased number of students and staff. However, most of the schools are housed in expensive buildings and are located on valuable real estate. Therefore, building programs will be costly, although it will be cheaper and more efficient to expand the present schools than it would be to build entirely new ones.[1] As an alternative, less pretentious buildings of brick or cement block could be built nearby to house all of the research activities and thus free enough space to accommodate additional students and staff. That is a program which is favored by some of our own faculty, who have calculated that an additional 24 students could be admitted to each class, raising the class total from 76 to 100, a 32% increase. The disadvantage is that any separation of teaching and research is detrimental to both.

Another possibility is to move the preclinical teaching and research into a cheaper building in the neighborhood. Most of us feel this would be a backward step because the closer the preclinical and clinical instruction can be kept, the better for both.[2] In fact, some of us would like to correlate premedical teaching with that of the medical school, as is done in all countries except the United States.[5]

Select Premedical Students?

If this program of having each medical school select its premedical students as freshmen (and correlating their premedical, preclinical and clinical instruction) accomplished nothing else, it would avoid the frustration of the 15,000 pre-

*Even before the war, the hospital expenditures were rising. For example, in 1936 the daily patient costs at Duke Hospital were $4.51. In 1940, 1941 and 1942 they were $5.35, $5.56 and $5.73, respectively. In 1947, 1948 and 1949, they had risen to $12.36, $13.38 and $14.20, respectively, and are still climbing. In an attempt to meet these increasing costs, the rates to patients were studied, and raised. In spite of these increases, the income usually has failed to keep pace with the greater rise in costs of operation. In 1947, for example, the average daily patient cost was $12.36 and the average daily collection from all patients was $10.12—a daily average loss of $2.24 per patient, which represents a contribution by Duke University to the charity medical care problem—a load which should be carried by the community. In 1948, the daily costs had risen to $13.38 and the collections to $10.38, making the Duke University subsidy to North Carolina medical charity $3 per patient day. However, in 1949, though the daily hospital costs had risen to $14.20, the collections had unexpectedly increased to $11.70 per day, and the University contribution was reduced to $2.50 per patient day. The situation at Vanderbilt and other university hospitals is similar.[4]

medical students who annually cannot be admitted to medical school. No school would accept more premedics than it could instruct in the later years and eventually graduate. However, that program is another story, but it argues for the desirability of keeping preclinical and clinical instruction together.

(b) *Expansion of teaching time:* Since, for most schools, new buildings and additions to the present buildings appear to be too costly, and since moving research activities or the preclinical instruction to cheaper nearby buildings seems undesirable, the utilization of the summer vacation appears to be a more satisfactory solution to the problem of producing more physicians. At present most of the 79 American medical schools have a nine-month academic year. Unless new facilities are built, existing classes cannot be enlarged without reducing educational standards. Therefore, to provide more physicians for the country and still maintain high standards of medical education, the physical equipment of all medical schools and teaching hospitals should be used to capacity for four quarters each year instead of nine months. We realize that some of the medical faculties, as well as the students, did not like the compulsory accelerated program of the war.[6] However, many of the difficulties of that plan were due to the depleted teaching staffs—one-third of ours was in the Armed Services—and to the fact that many of the students were *sent* to the medical schools rather than *selected* by them. Furthermore, the Army-Navy compulsory year was 48 weeks in contrast to the 44 weeks which we propose.

Our school now admits 76 students each October, and they completely fill our facilities for preclinical training. The present curriculum consists of two semesters in the first year and three quarters each in the second, third and fourth years. There is no summer quarter between the first and second year, but in the two clinical years the subjects of the autumn, winter and spring terms are repeated in the summer quarter. Students may take the two semesters of their first year, and three quarters in each of their subequent years, and receive their certificates in 4 calendar years, or they may, at the end of their second and third years, take the clinical quarters given during the summers and receive their certificates in 3¼ calendar years. Seventy-six per cent of the present seniors have availed themselves of this voluntary accelerated program and have completed their course in less than 4 calendar years. This is a 24% increase over the prewar average.

Continuous Program Advocated

More physicians can be graduated and as good or better academic standards maintained with the present facilities by adopting a continuous four-quarter program, and by eliminating the usual summer vacations. The proposed plan (see Schedule) would still leave eight weeks of holidays, i.e. two weeks at Christmas, four weeks in September and one week each in March and June.

SCHEDULE OF A CONTINUOUS 36 MONTH CURRICULUM

Admissions of Classes of 50 Students on February 1 and July 15 Each Year:

These classes would have 44 weeks of instruction and 8 weeks of vacation each calendar year, and be graduated in December and June, respectively, three years after admission.

Anatomy would be taught to the FEBRUARY class from *Feb. 1st* to *May 22* (16 weeks), and to the JULY class from *July 15* to *Nov. 4* (16 weeks).

Biochemistry, physiology and psychobiology would be taught to the FEBRUARY class from *June 1* to *Sept. 18* (16 weeks), and to the JULY class from *Nov. 11* to *Mar. 19* (16 weeks plus 2 weeks vacation at Christmas).

Pharmacology, bacteriology, parasitology and biostatistics would be taught to the FEBRUARY class from *Oct. 4* to *Dec. 18* (11 weeks), and to the JULY class from *Mar. 28* to *June 11* (11 weeks).

Pathology, clinical microscopy, physical diagnosis and public health would be taught to the FEBRUARY class from *Jan. 3* to *June 11* (22 weeks plus 1 week of vacation), and to the JULY class from *July 5* to *Dec. 17* (22 weeks plus 1 week of vacation).

At the end of their 6th quarter, each class would be divided into two groups of 25 students each, and be taught *junior medicine* and *junior surgery* in rotation for their 7th and 8th quarters, *obstetrics and pediatrics (including neuropsychiatry)* in rotation for their 9th and 10th quarters, and *senior medicine* and *senior surgery (including preventive medicine)* in rotation for their 11th and 12th quarters.

Additional members of the faculty, of course, will be necessary, and finding these additional instructors especially in the preclinical subjects, may seem to be a greater bottle-neck than obtaining money for their salaries.[1] However, remuneration comparable to that of private practice probably would retain the hundreds of young graduates who are at present on research and training fellowships.[1] These men are available now, and they are keen on academic medicine. Unless they can see a secure financial future in it they will drift off into private practice. *Any expansion plan must recognize the seriousness of this problem and provide funds now, like the Markle Scholarships in Medical Science, to keep these young graduates in academic medicine during this transition period.*

Three plans of admission have been considered: (a) accepting 25 students every three months as at the University of Tennessee College of Medicine,[7] *or* (b) 76 students every nine months as under the Army Specialized Training Program and Navy V-12 (S) Program,[8] *or* (c) 50 students every six months. Each of these plans will produce approximately 90 graduates annually (100 students admitted less the average of 10% attrition due to poor scholarship, health, loss of interest, etc.), or an increase of 32% over the present 68 annual graduates (76 admissions less 10% attrition). The average number of students in school at any one time under each of these new plans would be 275 (300 less attrition), which is the same number as under the present curriculum. However, under the new plans, these 275 students would be in school during each of the four quarters, while at present, the census of students in each quarter varies from 104 to 286, depending on the number who are utilizing the optional accelerated program.

Advantages and disadvantages of the four-quarter program: The Tennessee plan of admitting a class every three months has the advantages that the groups of students are small and that each group of students proceeds every three months from the last preclinical quarter to junior medicine. The disadvantages are that every subject must be taught every three months, and the lack of correlation with premedical college curricula and annual intern appointments.

The advantage of the Army-Navy plan is that the preclinical subjects need only be taught every nine months. The disadvantage is the lack of correlation between premedical college curricula and annual intern appointments.

Semiannual Admission Best

The admission of students in July and January has the advantages of better correlation with premedical college semesters—many students completing their entrance requirements in January; and that half of the graduates are available for July intern appointments. The fact that half of the students are graduated in December is of no great disadvantage in obtaining internships, as many of the present

10,700 internships become vacant by January through illness and other causes. From our experience with an optional accelerated program, there are more *good* internships available in January than there are graduates to fill them. If other medical schools should follow a similar curriculum, more internship appointments would be organized on a January or July basis.

The admission of 50 students every six months would require only two-thirds as much teaching space as is now used for the teaching of 76 students at one time. Although other activities such as the teaching of nurses and technicians require space, there should, nevertheless, be a considerable saving. The space thus saved would help to house the necessary additional teaching personnel and their research activities, though more space will be needed, regardless of the program. The Army-Navy plan does not possess this advantage. A considerable amount of preclinical instruction is carried out by personnel not paid from regular teaching budgets. They are assigned to teaching activities either from the clinical services or from research fellowships. The admission of a class every six months would make possible the maximum utilization of such assistants in instruction. The admission of students at fixed dates, instead of the irregular schedule in the Army-Navy plan, simplifies the problem of admission of students, whether examined from the viewpoint of the admissions committee, the student, the premedical advisors or the planners of the premedical curriculum.

As the class of 50 students would complete their preclinical training every six months, one half of the group (25 students) could study junior surgery and the other half junior medicine during the seventh quarter. During the eighth quarter the two groups could be reversed. Thus, all students would have taken one quarter's work in both medicine and surgery before beginning the study of obstetrics or pediatrics (see Schedule). This would also result in an even distribution of students in the clinical courses.

From our study of these plans, the admission of a class of 50 students each January and July (see Schedule) seems the most desirable—or the least undesirable—means of providing more physicians and of maintaining standards.

Disadvantage of Twice Yearly Admissions

The main disadvantage is that each preclinical subject must be taught twice a year. However, additional preclinical instructors would be appointed (see FINANCES, below) so that the teaching load could be redistributed. This would avoid overburdening any individual. His research program or his vacation would not be interfered with. Instead of all the members taking their vacations at the same time they could rotate the teaching and decide among themselves the quarter off for each instructor. It would be a great advantage to any member of the staff to be able to take his vacation during the months in which most medical schools, in this country and abroad, are in session. Furthermore, it would divide the responsibility of departmental administration and give each first-assistant an opportunity, during the quarter in which his chief is away, to gain the experience which he needs and usually does not get. For example, at Duke, if additional instructors were appointed in anatomy, there would be little increase in the teaching time by the existing staff and little decrease in the student-faculty contacts.

The clinical staffs of most medical schools are adequate at present to teach four quarters. After all, patients are ill throughout the year, and the hospital must be manned. As a matter of fact, it is easier to operate the wards and outpatient clinics with students than without them. At our school, a compulsory four-quarter program, with the same number of students each quarter, would produce more smoothly running services than the present optional plan in which the number of students in any clinical department varies from two to twenty-five per quarter. If more beds are needed for instruction, the affiliation of the Veterans Hospitals with the medical schools will provide adequate teaching opportunities in medicine, surgery and neuropsychiatry.[9] Most teaching hospitals have enough obstetric beds, though with the high cost of hospitalization, subsidies are needed to keep them filled. At present, because of the prevention programs, lactic acid evaporated milk for infant feeding and early sulfonamide and antibiotic therapy, the requirements for pediatric beds have been reduced. More of the teaching in pediatrics is being done, and should be, in the outpatient clinics.[10]

It is, of course, essential that the quality of instruction during the summer quarter be maintained at the highest level and not allowed to reach the depths of some summer courses. Air conditioning, especially in the Southern schools, would be necessary in all of the teaching rooms. At Duke, air conditioning was installed in the anatomy and pathology teaching laboratories, operating rooms and library during the Army-Navy program. However, all teaching space should be similarly equipped to maintain the efficiency of the staff and students. It also would greatly increase the comfort on the wards and in the offices.

The advantages to the medical student of the four-quarter schedule with graduation in three calendar years are obvious. He will be one year younger at graduation and will have an additional year for hospital or other training. He will be better prepared, for he will not have lost a fortnight or a month in October of each year getting back into the intellectual stride he had the preceding June. He will see the clinical material peculiar to the summer months.

Ills of Shorter Vacation Overemphasized

The disadvantages to the medical student have been overemphasized. For example, it is said that he needs the four months of vacation. However, practically all medical students at the present time work during their summer holidays; 50% study preclinical or clinical subjects in some place or other. If this time were spent under supervision at a medical school the character of the work would be improved and much valuable time saved. The 50% who earn money during the summer vacations could probably earn more in the year which they will save under the four-quarter system than in the three vacations of four months each. The establishment of loan funds, rather than scholarships, has done much to solve this phase of the problem.[11] It has been said that a medical student cannot physically endure the work of forty-four weeks a year. If so, he probably should enter some less arduous occupation, for as a physician he undoubtedly will have to work as hard or harder for longer than forty-four weeks a year. The total of eight weeks of vacation, which every student will have under the four-quarter system, should be sufficient for

anyone. The argument that the summer climate of Durham or of any other city would be injurious to medical students would be vigorously answered by the weather statistics of chambers of commerce, and also by the realization that the major part of the population remains at work all summer and that practically all the physicians continue their practices. A certain number of students, either through illness or through financial difficulties, will probably be absent one or more quarters, but under this curriculum they can take up their work at the beginning of the next quarter and not lose a whole year as is necessary at present.[12] As previously stated, 76% of our present seniors now voluntarily choose the optional accelerated program.

There are numerous other advantages in the four-quarter system: the tremendous capital invested in medical schools will not be idle one-third of the time; the clinical material of the hospitals will be better utilized, and the patients will receive better care.

This three-year plan is apparently acceptable to the medical boards of licensure of thirty-one states,[13] and it is hoped that the other seventeen will accept an intern year in lieu of the fourth calendar year of medical school.

FINANCES

(a) If 100 students were admitted annually instead of the present 76, as suggested above in *Expansion of teaching space,* the net increase in the student body would be 87 (24 more students in each of four classes or 96, less approximately 10% attrition), or a total of 362 students (275 present students plus 87 new students). The annual increase in income would be $62,250 (87 x $250 per quarter per 3 quarters per year.) This amount, although it helps, would not provide adequately for the additional instructors who would be needed, nor would it furnish the salary increases required to recruit these teachers and the necessary supplies, equipment, technical assistance, etc. Additional funds seem the only solution.

Proposed Laws Pending

Some of the pending Congressional bills for the aid of medical education provide annual subsidies of $500 for each medical student now enrolled, and a temporary annual bonus of $1,000 for each new medical student above the present average enrolment. Five hundred dollars for each of the 275 students now enrolled would provide $137,500. This is the amount needed at present for the increased cost of operating expenses, including small but necessary salary increases for the junior members of the staff, but it would not provide for any strengthening of the faculty or for any reduction in the present annual subsidy from the University endowment. The proposed temporary annual bonus of $1,000 for each of the 87 new students (if 100 instead of 76 were admitted each year, less attrition) would amount to $87,000 at the end of the fourth year, but it should be permanent and not temporary if it is to strengthen the faculty, provide new facilities, and reduce the annual subsidy needed from the University endowment.

(b) If the summer term were made compulsory as suggested in any of the four-quarter programs described above in *Expansion of teaching time,* the average annual tuition revenue would be $275,000 (275 students for four quarters of $250 each) instead of the present annual average of $206,250 (275 students for three quarters of $250 each), or an increase of $68,750.

If any of the Congressional education bills provide the payments mentioned above, the $500 for each of the present 275 students would amount to $137,500. However, this $500 for present students was based on the usual three-quarter year, and it should be increased to $666.66 for the proposed compulsory four-quarter year so that an additional $45,833 would be available for strengthening the faculty and for reducing the present subsidy from the University endowment. The temporary bonus of $1,000 for each new student also should be based on the four-quarter year, otherwise we should not be given credit for any new students, i.e. at present we have 275 students for three quarters annually, and under any of the above compulsory four-quarter programs, we would still have 275 students, though they would be in school four quarters per year. Actually under any of the four-quarter plans, we should have approximately 87 more students in all of the classes (24 more in each of four classes less 10% attrition), or a 32% increase. If a temporary bonus of $1,000 for each of these 87 proposed new students were given annually, the increase in income would be $87,000 at the end of the third year, or the same amount as would be received by increasing the classes to 100 but not requiring the summer quarter. However, these bonuses, which were based on the traditional three-quarter year, should be raised proportionally to cover the proposed four-quarter year, so that the increase in income would be $116,000 annually at the end of the third year.

The Present Emergency

The need for more doctors is now more acute than ever. The sooner the medical schools recognize their responsibility for increasing the number of physicians by going on a compulsory accelerated program, the better for the country. It was hard work during the Second War with one-third of our staff in the Armed Services, but with a full staff there is no reason why as good, if not a better program than the present one, cannot be organized.

For the reasons previously advanced, the admission of a class of 50 students each July and February is preferable to admitting 76 every nine months. However, in the present emergency, the latter program may be more feasible because the faculty became familiar with it during World War II.

During the War the faculty volunteered to carry the additional teaching load of the compulsory accelerated program without an increase in salary as part of their contribution to the war effort. If each instructor's salary had been proportionately increased for this extra teaching, the additional annual teaching cost of the accelerated program at Duke would have been $84,314. The additional tuition for this extra quarter was $42,450 ($150 prewar tuition per quarter $\times$ 283 undergraduate medical students), which would have made an annual net increased cost to Duke of $41,864 ($84,314—$42,450).

During the present emergency, it is proposed to use the additional tuition of $68,750—an increase of one-third for the compulsory summer quarter (see FINANCES (b), above)— to obtain additional instructors or to increase each preclinical instructor's salary proportionally for the extra teaching which this compulsory accelerated schedule would involve. The preclinical teaching load would be increased by 33.3 per cent. The present preclinical instructional salaries (exclusive of technicians, secretaries, research,

etc.), amount to $207,930. An increase of one-third would cost $69,310. Efforts are being made to raise the additional funds required. The clinical staff are on a four-quarter teaching schedule. Additional faculty and salary increases, though welcome, are not as necessary for them as for the preclinical faculty.

Because many of the present students work gainfully during the summer vacations, an increase in the loan fund should be authorized for medical students.

Conclusions

1. The present cost of medical education,[14] the pressing need for more physicians,[2] and the financial plight of most medical schools[3] make it imperative that plans be made for the maximum utilization of existing teaching facilities and personnel. The self-satisfaction with the status quo, which ruined the German medical schools,[15] should be avoided.

2. The expansion of teaching time through the utilization of the summers and the admission of smaller classes at more frequent intervals is preferable to the expansion of teaching space and the admission of a larger class once annually.

3. The present standards of medical education can be maintained if preference in admission is given to carefully selected students who have intelligence and character, and if the M.D. degree is given after the completion of three medical school years of forty-four weeks each. The rigid selection of students is the essential factor in the success of this experiment.

4. Of the three methods of admitting students under an accelerated program, i.e. every three, six or nine months, classes every six months seem the least undesirable.

5. The above emphasis on finances may seem too mercenary. However, the monetary needs of medical education have passed the point of false modesty.

6. Regardless of finances, the compulsory four-quarter curriculum is, in our opinion, for the best interest of medical education and medical service, and has been advocated at our school for the past twenty years.[12]

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Graduate Education in Medicine

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A university is, properly considered, a community of scholars, with a prevailing and interacting spirit. Graduate education in medicine must recognize this and move toward integration within the framework of the university community. Only in this way will medicine serve its own best interests and share in the progress of the university.

We have accepted as a matter of course that scholarly studies be pursued in traditionally academic fields. We have too long assumed, however, that the basic character of medical education is the acquiring of information. As knowledge has increased to stupendous proportions, we find that acquirement of facts cannot be satisfactorily complete and that it is now necessary for the student to know principles, theories and mechanisms on which to hang his facts. Under pressure the student is driven through his medical education without having time or energy to explore the fields through which he is passing.

The results do not condemn the practice, because we certainly produce wonderfully trained doctors. But to some persons, the experience is not satisfying. They want to go back over the field to scan the prospect more fully, to delay over some bit of ground attractive for exploration, and even to pick a flower here and there which they had but glanced at before without recognizing fully its priceless beauty. To these curious and able persons, additional educational opportunities are due. These are the people who will add to knowledge, teach oncoming doctors, and themselves be better scientists, clinicians and professional men.

If we are interested in improving medical education so as to advance the creation, teaching and practice of medical knowledge, we are concerned with the functions of a university. And within the university, the graduate school is prepared to serve medical education in respect to those scholarly and research activities which lie jointly within the responsibilities and provinces of graduate and medical education. May I say at the outset that I am using the expression "graduate education" in reference to advanced education after the bachelor's degree, and not limiting it to studies undertaken after the medical degree? Most of my paper will deal with graduate education as such, but I suggest that you anticipate my closing remarks by reading into my discussion the appropriate references to medicine.

In order that this developing relation between graduate education and medicine may be better understood, I propose to spend most of my time on

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the general issues of what a graduate school is, what the principles of graduate education are, and what the university point of view is. With these observations as a foundation, I shall then pass quickly through the structure of advanced education in medicine, attempting to point out how the graduate school can function in the development of the scholarly and research aspects of medical education.

Origins of Graduate Education

The provision of facilities for advanced education in this country is an extension of a fundamental principle of our democracy—the education of our youth. The growth of our educational system through the college and graduate levels has been mutually related to the growth of knowledge. Responding to the demands for further education and desiring to impart to youth the latest advances in knowledge, the traditional departments of instruction have extended their curricula beyond the point ordinarily reached for the bachelor's degree. As departments have outgrown their earlier confines of subject matter, students have likewise continued to aspire to still more advanced degrees.

Thus graduate education in this country came into existence, rarely with any more motive than to teach and study what could not be crowded into the usual four years of undergraduate work. In about nine-tenths of our institutions giving graduate work, the graduate school then became organized as an affiliation of the upper reaches of the respective subject-matter departments. Research and programs leading to graduate degrees were added as appropriate elements in graduate studies.

There is small wonder that those who look at graduate education from the outside and who know of the peculiar ancestry of most graduate schools regard them as having no plan or organization, much less a purpose or standard of achievement. If the components of the graduate school are recognized to be as multiple as the number of departments giving graduate work and as diverse as the interests of a university, it would appear that the charges of lack of unity are justified. Can the objectives of graduate instruction in art be the same as those in physics? Does graduate work in pharmacy have the same standards as that in English literature? Do business administration and physiology share the same purposes at the graduate level?

Two or three answers are suggested to meet this apparent conflict between the unity of graduate school objectives and the diverse nature of subjects. Graduate education can find a common denominator in the various fields of subject matter, if those fields independently have standards of achievement, if they have sound elements of scholarship, and if each has a genuine frontier expanding through research. Should these characteristics be lacking in any subject, it does not belong to the graduate school and, perhaps, has no place in a university. In fact, I should like to start with the premise that there is a common factor of scholarship in subjects of advanced study, and that as scholarship is the standard of intellectual activities of a graduate school, so is it the objective.

Graduate Study Implies Scholarship

I seem to labor this point. My purpose is to make it clear that although graduate education had an irregular and uncertain beginning, its basic quality of scholarship has endured. In fact, as graduate education in the United States can now be considered as of age, it has the responsibility of adulthood to see that its characteristic of scholarship is maintained in the face of the temptations of the times. What are these temptations? Quick returns instead of building for the intellectual future; training in craftsmanship instead of in science; materialism instead of values. These are the temptations against which high standards of scholarship can prevail.

Another responsibility of graduate education refers to a human characteristic—the desire to gain a mark of learning (a degree) and to belong to the elite, presumably the select few. These desires are bad to the extent that the degree and not the learning is the aim, and when gaining a degree is in response to unreasonable pressures from employers and accrediting agencies. The desire for a degree is good when the student looks to it as a mark of his genuine accomplishment—the achievement of a scholastically sound program. Herein lies responsibility—on the part of the student, the faculty member, the department of instruction, the graduate school and the university. They should see, in the first place, that the graduate program in each approved department is scholastically worthy of the name; in the second place, that the degree has the appropriate standard behind it so that it has the value that it purports to have; and, in the third place, that the student experiences an intellectual growth justifying the university's marking him with a degree.

These qualifications, however, do not come about by chance. Although the university as a whole confers the degree, some unit authorized to bear the responsibility must certify to the university the validity of the degree and the worthiness of the student for it. This unit, in connection with graduate degrees and students, is the graduate school functioning educationally as a loose organization of departmental faculties offering postcollegiate studies, and administratively as the office of the graduate school. This responsibility of certification by the graduate school is carried out on the basis of tradition and legislative actions by the graduate council or central committee. The university provides the physical and personal facilities and the atmosphere of administrative understanding.

Functions of Graduate School Administration

Under the circumstances, the graduate school administration is responsible for three general functions: it administers the academic procedures common among the departments and records the students' scholastic achievements; it acts as the spokesman for the graduate school; and it provides leadership in the university in advanced education and research.

These, then, are the facets of graduate education in graduate schools of American universities: advanced instruction of acceptable quality; validity of graduate degrees; responsibility of the graduate school for the common

objective of scholarship; leadership of the graduate school administration; and the provision of facilities by the university.

In carrying out its responsibilities in scholarship and leadership, the graduate school follows certain principles which are appropriate for our consideration.

Principles Guiding Graduate Education

The first principle is the assurance that the department of instruction is qualified to give graduate work leading to the graduate degree authorized to be given (a particular Master's degree or the Doctor of Philosophy degree). Approval should be granted only by the central legislative body of the graduate school (the graduate council) after a study by a faculty committee. The decision for approval is not based on courtesy and good intentions, but on certain criteria, such as these: the distinctive character of the subject so that it presents an entity, that is, a definite body of knowledge at the graduate level; the existence in the subject of a frontier expanding with research; the grounding of the graduate work on a sound undergraduate foundation; the quality and completeness of the graduate program proposed; the availability of related subject-matter departments for breadth and inter-relationships; the qualifications of the departmental faculty academically and professionally, and in research; adequacy of library resources; the availability of superior research facilities; and an atmosphere in the department conducive to high standards of scholarship.

Another principle guiding graduate work is the respect for the individuality of the student and his program. When the person reaches the graduate level, he is developing the individual characteristics of his intellectual outlook and more definitely laying the groundwork for his future. Not only should the student have a program of study suited to his peculiar needs, but he should also receive personal attention throughout his graduate career. This means a faculty interested in the student and willing to give him time and guidance. It means, however, guidance of the student in the development of his own responsibilities, and not an attitude of coddling or directing. It is said that an undergraduate is taught, while the graduate student learns. The maturing youth is at this level preparing himself for leadership and independence of thought, and training for such purposes is, per force, individualistic. The pursuit of this principle presupposes a wide and flexible program, as well as wise and flexible advisers, and a sufficient number of qualified faculty members or a limitation in the number of graduate students.

A third principle pervading graduate work is that of the right and responsibility of inquiry. As graduate students are led to the frontiers of knowledge, vistas are opened to their inquisitive gaze. In some places the paths are hardly marked, and certainly between the isolated roads is much territory unexplored. To learn not only what is there, but also what its relationships are with other and more familiar ground is all in the spirit of investigation. Observation, analysis, correlation and synthesis require mental processes of judgment, evaluation and interpretation. Although training in research illustrates the most

direct means of developing these critical traits of thinking, all graduate work, whether didactic or experimental, should be pervaded by the idea of suspended judgment, respect for the significance of data, and the importance of evidence. In the same vein, graduate experience in research should be such as to provide training in investigation, rather than research for the sole purpose of discovery. Inasmuch as the attitude of investigation is fostered for a future and continuing intellectual career, so is the experience in research in the graduate school a training rather than an end in itself.

Graduate Work Should Not Be Narrow

This brings us to a fourth principle to be followed in graduate education —breadth of education. Too easy is it to suppose that graduate work is specialization and specialization a narrow training. The interrelationship of fields of knowledge is becoming increasingly apparent. As details of information are sought and found, the more evident is the dependence of details in one field on related principles and theories in another. To consider an observation as isolated is to deny the facts. Nowhere is it more important than in the graduate school that this paradox be understood and the type of education in courses and research be broad. Breadth of study encourages attention to principles and relationships and minimizes the significance of techniques and methods. Because of the tremendous growth of knowledge, we can hardly expect one person to encompass all the aspects of his chosen subject. But we can expect him to learn its principles, on which he can build as he and his subject grow. "Education is too often perpendicular," it is said, "while life is horizontal." And so it is well for students in preparing for the current demands of life to pursue broad rather than narrowly specialized graduate education.

The fifth principle is the responsibility for training in communication— a two-way communication. First, the graduate student is to learn what knowledge is already gained and recorded. He should know what others have thought and done in his field of interest; the world's literature is at his disposal so that he can accurately locate his position in respect to the advancement of his inquiry. To profit fully from this privilege of assimilation, the student must learn how to read, without a barrier of language, manner of thinking or technique of investigation. In the second place, a recipient of the thoughts and findings of others and of a valid advanced education should be able to impart to others the results of his own work. Exchange of ideas, communication of information, and the responsibility attending such freedom are the life lines of today's world. The development of the ability to communicate through the written and spoken word is a principle of graduate education.

Scholarship Is Basic

Pervading all these principles of graduate education is scholarship, that indefinite yet recognizable quality of intellectual accomplishment, quality in all the steps of intellectual achievement—in concept, planning, execution,

evaluation, interpretation, presentation. The student, faculty, graduate school or university who and which fails in scholarship fails in graduate education.

I raised the question at the outset as to whether graduate education does have objectives. I referred to the responsibilities of graduate schools for quality in graduate education, and I have presented a list of principles which determine that quality. Now I should like to remark that the five principles presented are the guides and objectives of graduate education.

But there is one other element in graduate education to which I have alluded only briefly—the university. It is easy to see that the university, as an administrative body, provides funds for graduate education either from legislative appropriations or from endowments and private sources. It is fairly obvious that before graduate education can be effectively conducted in an institution, the principal governing body must have an interest and an understanding of what graduate education means and requires. But it is not so generally recognized that the effectiveness of a graduate program offered by a department of instruction depends on its having a university point of view.

Community Spirit Should Prevail

A university is commonly defined as a community of scholars. If some members of the faculty do not care to commune and a department does not agree to be a member of the intellectual community, then the advantages of being in a university are lost. All the subjects I know and think worthy of being in a graduate school have both their foundations and their relationships. If these observations are not so, then my list of principles and objectives breaks down.

Applications of the university point of view, however, are not limited to finances, personnel or subject matter. It is also pertinent to the attitude of openmindedness, openheartedness, to the work of investigators in allied departments. Limitation of instruction to a narrow field, segregation of students from allied subjects, and refusal to offer work for students of other departments are evidences against a truly university department. Graduate education looks for the university perspective, consistent with the trend that departments are only administrative conveniences and not walled cities.

It has been my intention in the foregoing remarks to present a discussion of graduate education in general which would serve as a background for the consideration of graduate education in the field of medicine. It is my conviction that the principles presented are pertinent as factors guiding advanced studies in medicine as in other fields. Furthermore, these factors were discussed as generally applicable so as to make it clear that we are thinking of graduate work in the broader sense, whether pursued before or after the degree of Doctor of Medicine.

Principles Apply to Medical Education

The qualification of the department of instruction, the individualized attention to the graduate student, the place of training in research in the

graduate program, the breadth and basic nature of advanced education, ability in communication, and through all, the quality of scholarship are applicable to graduate work in medical subjects, both preclinical and clinical.

Medical schools are now predominantly associated with universities. This movement has been the result of recognizing the importance of quality in medical education, the atmosphere of investigation associated with a university, and, in many instances, financial support. For the purposes of our argument, scholarship is the common bond tying medical departments to the graduate school of the university.

The clinical departments and, to a much less extent, the preclinical departments have tended to segregate themselves behind a professional barrier. That practice is fast disappearing and its demise must be hastened. Medicine has long taken part in this interdependence of fields of human endeavor and has long profited by the experimental work in many basic and allied sciences. Medical men, departments and schools who and which do not recognize the basic principles of relationships I have pointed out are but pretending to deny themselves of the advantages of association. For they are being benefited but are not offering a reciprocal relation to others. Although most medical schools are affiliated with universities, too many departments and individuals are not university-minded and segregate themselves, their students, their courses and their problems.

Medical School Must Maintain University Spirit

Sometimes medical schools and teaching hospitals are geographically separated from the university campus. If the university outlook and spirit are in the medical school, however, the campus is there, too. I admit that to hold this point of view is not easily done, but the persons, the atmosphere and the programs of study and research together determine the location of the department. The transition from exclusive professionalism to true university associations will be endangered by precipitous action and wholesale measures; a gradual development of relationships, with understanding, is to be desired. The direction and progress are certain and sound.

At this point, I should like to enlarge the problem by a reference to a particular purpose of graduate education in the medical field, that of providing the encouragement and means for training additional teachers in medicine. (Again, I am not distinguishing between an M.D. and one not holding that degree.) In response to public demands, some medical schools are increasing their output of doctors. Add to this the perennial demand for teachers, the growth of research activities in medical fields, and the staffing of additional institutions of medicine, and the problem of having sufficient numbers of qualified teachers, research workers and administrators grows apace. However, the training of medical instructors, whether M.D.'s or not, cannot be separated from their training in research. The medical man or woman with academic responsibilities is kept mentally alive by research training and later by investigative careers. Medical schools must no longer be content with teaching the

medicine of today, but increasingly be prepared to teach the bases for the medicine of tomorrow. Too much teaching in medicine has been "what," while in contrast science introduces the concepts of "why" and "how." Modern trained teachers are necessary to teach modern medicine.

The problem of staffing the medical departments is not without its economic side. Medical education costs; graduate education is expensive; and to attract adequately trained teachers, appropriately high salaries will have to be paid. I feel that if the public wants more and better doctors, it must be aroused to pay for them. The costs should not prevent us as educators from meeting the task of encouraging and preparing, the very best we can, those who are attracted to teaching in the medical subjects.

Graduate education in medicine is no more static than in other fields. In fact, because it is relatively new in a formal sense, graduate work in clinical medicine is still very much in a fluid state. For the preclinical departments we see operating the traditional programs leading to the Master of Science and Doctor of Philosophy degrees. Those who hold the Doctor of Medicine degree are entitled to be candidates for the same graduate degrees, although ordinarily the chronologic order is in the other direction. Still another type of program has been carried on at our institution for some years, namely, the combination of medical studies with a graduate program to the Master's degree in a preclinical department or rarely in a basic science department.

The last type of graduate program to which I wish to refer has been conducted at our institution for about 20 years, with greater emphasis in the last three years. This is entered by assistant residents and residents in clinical departments, holders of the M.D. degree, who are candidates for the Master of Medical Science degree. It is essentially a research degree, but students are required to attend seminars and do library studies in addition to their research work, under regular graduate school registrations. The research ranges in type from being largely clinical to being mostly in the basic sciences with a clinical application. Scientific publication of the research is the rule, as a departmental requirement.

Addition to Traditional Programs

Thus, we see an addition to the traditional degree programs, in answer to the request of young doctors for advanced education and training in research and made possible through the cooperation of medical departments and hospital services with the university's graduate school. However, this must be sharply differentiated in nature and concept from the post-M.D. training for specialty boards and for the sharpening of professional skills. Such a purpose or practice does not belong in the graduate school. But when the studies are scientific, basic, broad, academic, and scholarly in nature, an approved program and a degree appropriately come under the jurisdiction of the graduate school.

If I seem to have emphasized the institutional aspect of graduate education, I have been misunderstood in my intentions. I unavoidably speak of university, graduate school and medical school, but it is the humanistic

qualities of these institutions for which I plead. Note how personal are the principles I have presented as essential in graduate education: individuality of the student, person-to-person communication, and breadth of education for personal understanding. Scholarship and training in research are localized in the individual. The adherence to these personalized principles depends, of course, on the understanding and interest of faculty members in students as persons and scholarship as a personal achievement.

Graduate education in medicine is not just now beginning; it has had a long and promising history. I have the opinion, however, that graduate studies in medicine in the sense discussed still hold promise rather than fulfillment. If I read the signs aright, medical knowledge has outgrown itself and, as in nonmedical fields, advanced education and research are in order and are demanded by the intellectually curious. Insofar as the objectives of graduate medical education and of university graduate schools coincide, the sound growth of scientific medicine and scholarship is assured.

Distinctions Between Graduate and Undergraduate Medical Education

Roscoe L. Pullen*

Although graduate medical education has become one of the most important aspects of the medical teaching program, there has been no concerted attempt to construct unified curricula for graduate students. To a large extent, this phase of the training of students depends on the requirements established by the specialty boards. This is education to conform to a minimum standard in a narrow field and must be intelligently surveyed with an eye to improvement.

In the discussion to follow, the term "graduate medical education" is used in its general sense to denote any form of educational endeavor following the attainment of the degree of Doctor of Medicine. It is recognized that "graduate" education, strictly speaking, refers to instruction leading to an advanced University degree which, by its nature, connotes a measure of intellectual achievement and promise; for the most part, "graduate" medical education would imply courses of instruction leading to such degrees as Master of Science, Master of Medical Science, Doctor of Philosophy, and the like, such instruction, by and large, following the successful completion of courses leading to the degree of Doctor of Medicine. In contradistinction, "postgraduate" medical education embraces all forms of instruction following the attainment of the degree of Doctor of Medicine which serve to prepare the physician for a higher or more successful level of medical practice; fulfillment of the criteria for an advanced degree is of secondary, or no, importance. The terms are defined loosely and are often used interchangeably unless qualification is requested.

During the past twenty years, graduate medical education has assumed its rightful place in the activities of many schools of medicine; for various reasons, it has not yet attained a status comparable to that of undergraduate medical education. It is the purpose of this communication to review briefly some of the differences between graduate and undergraduate medical education.

Differences Between Graduate and Undergraduate Education

Graduate medical education differs from undergraduate medical education in several respects:

1. For the most part, the graduate medical student already possesses an advanced degree, usually a doctorate. Such a degree signifies a maturity of thought and sincerity of purpose which may not be developed to the same extent in the undergraduate medical student. The candidate for graduate

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study is older, manifests a different perspective toward the subject of study and the type of instruction offered, and, more than the undergraduate student, is beset by personal problems, such as the maintenance of a family, the payment of incurred debts, the social and economic competition among his colleagues, the fulfillment of military service, and the like.

2. The objectives of the graduate medical student are usually more clearly defined and limited than are those of the undergraduate medical student. This poses a peculiarly cogent problem in graduate medical education for the graduate student is apt to concentrate his attention on a very small aspect of medical practice or research, with the inevitable ills that such concentration develops. Perhaps, even more than the undergraduate medical student, the graduate medical student is less tolerant, and, in many instances, less aware, of the social, economic and civic influences at work in the community in which he resides, so bent is he on the acquisition of specialized medical knowledge in the shortest possible time.

3. The procedures of application and enrollment for graduate medical education differ considerably from those of undergraduate medical training. Competition for desirable residencies, for example, in surgery, is keen in most teaching centers, and this competition fosters several unique situations: The graduate medical student seeks the residency or other form of advanced medical training on his personal knowledge of the professor under whom he wishes to train; the influences of the university as a whole or the teaching hospital are less readily felt by the graduate student, for it must be conceded that the graduate medical student has far greater knowledge of the caliber and teaching effectiveness of the faculty than does the undergraduate medical student when he applies for admission to a school of medicine. The result of this is that the spread of graduate medical students within certain parts of the university is apt to be spotty, as contrasted with undergraduate instruction. By the same token, the graduate medical student has a well formed notion of the training which he desires; should it not be forthcoming, he is quick to express his discontent, seek training elsewhere, or enter gainful pursuits. The undergraduate student does not enjoy a comparable degree of freedom of action; he may be equally as discontented with the quality of instruction granted by the faculty, but he cannot afford to take risks which may mean his dismissal from school.

4. The bulk of graduate medical training programs take place today under the administrative authority of a nonuniversity institution, such as the community hospital or the several Federal agencies (Veterans Administration, U.S. Armed Forces, U.S. Public Health Service). The various schools of medicine affiliated with such teaching institutions exercise, for the most part, advisory functions; in the ultimate analysis, the graduate medical student remains the employee legally of the institution which he serves. The development of graduate medical education has been in many instances retarded and in other instances advanced by such affiliation. That it renders the adminis-

trative liaison between the school of medicine and the teaching institution more complex is apparent to the most casual observer.

Schools Do Not Determine Criteria

5. Even as universities and schools of medicine may not exercise administrative control over most of the graduate medical students of today, neither do the universities and the schools of medicine determine the criteria in most instances for the level of the graduate medical education. For the most part, that function has been usurped by the various American Boards, the American Public Health Association, or other accrediting agencies. Whether it harbors good or ill for graduate medical education, the unalterable fact remains that such movements have forced the various schools of medicine and teaching hospitals to accept the passive role of meeting the minimum requirements of instruction as established by the particular accrediting agency of the moment. Too few schools of medicine have taken the initiative and established forms of instruction at the graduate medical level on an individual and intellectual plane befitting university thought and enterprise, i.e., providing instruction on an optimum level far and beyond the minimum requirements of the accrediting agency concerned. There has been an appalling lack of interest in this particular problem of graduate medical education.

6. Graduate medical education is more expensive than undergraduate medical education; just how much more expensive, no one can say. The difficulties of determining these costs arise from several factors: Few schools of medicine have an actuarial breakdown of the cost of undergraduate as contrasted with graduate medical education; nor can such estimates be compiled readily for the reason that considerable overlapping of the two fields of instruction occurs and graduate students are frequently assigned to the teaching of undergraduate students as a form of graduate medical instruction. Then, too, a great deal of the cost of graduate medical education is borne by research grants; however, such grants-in-aid do not cover all the costs of graduate medical education, a fact which has been emphasized repeatedly in these columns. It should also be mentioned that department heads and faculty are reluctant to consider the costs of graduate medical education *per se;* many members of the faculty cherish the conviction that the faculty and the university should be glad to "donate" their services to graduate medical education for the sake of the common weal. Finally, it must be admitted that no inconsiderable amount of the cost of graduate medical education is carried as concealed costs of hospital operation; again, definite figures concerning these costs are not available for analysis. But the costs of graduate medical education, vague though they may appear, do militate against the immediate expansion of the facilities for graduate medical training of any type.

Minimum Requirements Lengthy

7. Graduate medical education is as long or, in many instances, longer than undergraduate medical education. To meet the minimum requirements for specialization in most fields, the graduate must complete one year of internship and three years of advanced study, a total of four years.

8. The demands for certain categories and numbers of patients, both inpatient and outpatient, are greater for graduate medical education than for undergraduate medical education. Although the Council on Medical Education and Hospitals of the American Medical Association and the various examining boards have established criteria for the optimum number of patients that an intern, a resident or a graduate medical student should have available for study during his period of approved training, the range of variation is large. The problem is complicated furthermore by the fact that in most teaching institutions the patients are utilized by both the undergraduate and graduate medical students, not to mention the use of inpatient and outpatient facilities alike for research studies or to fulfill community obligations.

9. It is accepted generally that the objectives of undergraduate medical education are to produce candidates for the degree of Doctor of Medicine who possess broad, albeit sketchy, knowledge of the major fields of medical practice. Throughout the years, the undergraduate curriculums in most medical schools have become remarkably similar, although little differences here and there do crop up. In graduate medical education, the objectives are as variable as the ends to which the education will be applied. They have been subject to distinct personal interpretations on the part of both the faculty and the graduate medical student. As a consequence, no curriculum comparable to that of the undergraduate curriculum has been devised and in many departments no formal program of study has been contemplated or instituted. Unfortunately, this is not an easy matter to solve. Consider the variety of graduate medical students to be found today in most medical schools: interns, residents and assistant residents in the various specialties, general practice residents, teaching fellows, research fellows and assistants, graduate students pursuing credits for an advanced university degree, postgraduate students, physicians returning for refresher or continuation courses, and (with tongue in cheek) the training and advancement of junior members of the faculty, not to mention the registrants in the established courses of public health and the allied medical sciences of dietetics, social service, laboratory technology, sanitation, public health nursing, specialty nursing (psychiatry, etc.), radiographic technology, hospital administration, and others.

Specialties and Subspecialties

To make matters worse, each major specialty may be divided into certain subspecialties; internal medicine, for example, may be broken down readily into the subspecialties of hematology, allergy, endocrinology, nutrition and metabolism, gastroenterology, tropical medicine, psychosomatic medicine, cardiology, chest diseases, and more—any one of which is a full time program in itself. Yet the candidate for examination by the American Board of Internal Medicine, for example, must prepare himself in the broad aspects of internal medicine if he wishes to qualify for that examination, and he must pass the examination before he can be examined for one of the subspecialties. Is it any wonder that few faculties have drawn up an established curriculum in graduate medical education? Yet is it fair, or pedagogic, to deny the grad-

uate medical student an organized program simply because of the complexity of the task of assembling one? Would not his education be materially advanced by such organization?

10. In view of the multiplicity of objectives of graduate medical education in the minds of each graduate student as well as each member of the faculty, should the scope and limitations of graduate medical education be defined? At the present time, graduate medical education differs from undergraduate medical education in being subject to extrauniversity influences of a very real and absorbing character as follows:

A.—The improvement of the level of clinical practice in the community for which the medical school feels a major responsibility. This is a paramount challenge which few can deny. In the southern part of the United States, at least, there is no question that the general practitioner is the most important member of the medical profession in each community. That being so, the chief efforts of graduate medical education should, perhaps, be directed to the improvement of the level of general practice in each community, but this problem is more involved than it would seem at first glance. The mere fact of improving the training for general practitioners, of keeping them abreast of current developments, of providing consultation services, and the like, will not meet the whole issue, although it is without question an important aspect of the problem. The quality of medical care in a community is influenced not only by the number and training of the general practitioners but also by the number and availability of hospital beds, the reliability of the ancillary services such as radiology, pathology, clinical pathology, the public health officer, the public health nurse, the availability of home nursing, the adequacy of institutions for the elderly, the incurable or the chronically ill, the facilities for transportation and communications in the area, the proximity to larger medical centers for expert consultations or other services, the height of educational attainments of the citizenry at large, and the level of social, economic and other factors.

Clinical Specialists in Demand

B.—The production of specialists. Following the cessation of hostilities during World War II, graduate medical education received a tremendous impetus for the production of specialists in the various clinical fields. This impact is still present though tapering off to a considerable extent at the present time. However, it does pose some questions: How many specialists of each category should be trained to practice medicine within a given community? Is there danger of producing too many or too few specialists? Will medical care for the people as a whole be improved more quickly by the production of specialists or by better training of general practitioners and the ancillary personnel to improve the level of general practice? Since graduate medical education is admittedly expensive, what is the wisest investment and expenditure of university funds in this regard?

C.—The care of both inpatients and outpatients in the various teaching

hospitals. This still remains an important duty of graduate medical education; while it may be argued that such patient assignment is instructional, it must also be admitted tacitly that occasionally it is the *raison d'etre* for the graduate medical student.

D.—The instruction of undergraduate medical students. With rising costs of medical education, many departments are augmenting their teaching faculty under the disguise of graduate medical education. There is no question but that such activities possess instructional value, but there is likewise a limit beyond which such practices should not grow, lest charges of exploitation of the graduate medical student and poorer quality of undergraduate instruction be levelled against the schools of medicine.

E.—The development of research. Research grants have stimulated considerable interest in graduate medical education; the funds from such grants frequently have provided the equipment, the personnel, as well as the livelihood of many graduate medical students. Again, there is a danger inherent in this practice: that of exceeding the amount of time which may properly be devoted to research and that which should be devoted to mastery of the clinical aspects of the particular field of study. For it must be recognized that the majority of graduate medical students presently working on research projects will ultimately enter into the practice of medicine; it is unfair to the student not to prepare him for such calling at the time of his formal graduate medical training.

Faculty Recruitment is Vital

F.—Recruitment for academic personnel. Though listed near the bottom, this is of great importance. No more fertile source of additions to the faculty, especially in the lower ranks, exists than the pool of graduate medical students.

G.—Recruitment for public health and other community health agencies. The number of young men and women who choose careers in public health or other community health agencies today are too few to meet the vacancies now existing in the several health departments and other fields. This situation deserves the thoughtful consideration of all medical educators. Again, the graduate student in public health and related fields should be acquainted with the careers available in such fields. It also brings up the problem of whether the present facilities for such graduate medical education should be expanded and means discovered to interest an increasing number of physicians to undertake such programs of study.

H.—The development of the allied medical fields. It has been mentioned above that physicians practicing in any community should have access to certain ancillary services which will enlarge and improve their medical practice. Graduate medical education cannot escape its obligation to development of the allied fields of laboratory technology, radiographic technology, nursing services, hospital administration, public health nursing, dietetics, social service, and the like.

11. There are subtle and distinct differences in the types of instruction

for graduate and undergraduate medical students. Unfortunately, these differences are not as well recognized by many faculty members as is desirable. All too often, the instruction of the graduate medical students is taken as a matter of course, with little thought as to whether the ends of the program are being achieved. In part, this is lack of time, and personnel, on behalf of the faculty, but, perhaps, of greater influence is a difference of philosophy among the individual members of the faculty as to what constitutes an adequate graduate program. We have stated above that the objectives of graduate medical education are as variable as the ends to which it will be applied. For that reason, many faculty members argue that graduate medical education is a highly individualized type of instruction, that it should be a compromise between the needs of the student and the facilities available.

Pedagogy Must Be Improved

There is no disagreement with this point except one of practicality. Can such individuality of graduate instruction be achieved with present personnel and equipment in the schools of medicine? Are sufficient funds available to support such an expensive program? Will such instruction produce enough well trained physicians to meet the needs of medical practice for society as a whole, for industry, for the military services, for public health, for education? If the shortcomings of this philosophy are recognized, graduate medical education takes on an entirely different complexion. The problem now becomes one of improved pedagogy, of drawing up a definite program which will meet the needs for the majority of the graduate medical students, and of patterning the instruction to the level of graduate training. Some will argue that this is mass production, but is that concept greatly different from undergraduate instruction as now practiced?

The graduate medical student needs comprehension of the principles of the basic sciences to an even greater extent than does the undergraduate student. The burden for training in the basic sciences should not be thrust entirely on the basic science faculty, nor should a portion of time in the graduate training program be set aside for "basic science review." What is desirable is that the principles of the basic sciences be taught throughout the entire graduate period of study; all members of the faculty should engage in this activity of stressing the principles of the various basic sciences as applied at the bedside, in the clinic, in the operating room, as well as in the laboratory or class room.

Socratic Method Superior

Forms of pedagogy should be instituted which conform best to the abilities of the faculty and the facilities available. The lecture method of presentation is less effective than the Socratic question-and-answer method; the latter type of instruction should be practiced constantly on ward rounds, in the clinicopathological conferences, in the seminar or journal club meeting, in the ward and in the clinic. Although the graduate student is capable of pursuing considerable study in the library, and should be encouraged to do so, he should not be expected, at the beginning, to exercise mature powers of

discrimination and analysis to that which he reads. These faculties are developed gradually and the instructor should assist in such development. Some facts of medicine may be memorized, but the physician trained in this manner would lack judgment, one of the most difficult of all intellectual processes to impart.

The graduate medical student should receive the maximum possible practical experience in his field. It is not enough that he know the theories and principles of his subject; he should be able to apply them with skill, deftness and assurance. Were that not so, his graduate medical education could not be passed on in benefits for the people he may serve. In many clinical fields, such as the surgical specialties, this becomes a limiting factor in graduate medical education.

In view of the changing times in which we live and the impacts that future research may play in the practice of medicine, it would appear wise to keep the level of graduate medical instruction as broad as possible. Great danger is inherent in too narrow, or too highly specialized forms of instruction. Let me cite an illustration to clarify this point. A decade ago, the field of otolaryngology was an honored and well established clinical specialty. Today, with the new antibiotics and other developments, the volume of patients seeking the skills of the specialist in otolaryngology is dwindling, so much so that some thoughtful otolaryngologists feel that their specialty is threatened with extinction. The challenge in otolaryngology is to discover new areas and clinical entities amenable to their particular methods and procedures of diagnosis and treatment. Doubtlessly, the field of otolaryngology continues to have a great future, but such would not be so if the otolaryngologist of today had been trained narrowly in his specialty as it existed a few years ago. Similar changes may apply from time to time to other fields of medicine.

Community Needs Cannot Be Ignored

Finally, in my humble opinion, another aspect of graduate medical training which should not be neglected is an understanding of the social and economic influences at work in the community. Because the graduate medical student is apt to evince little interest in these changes, special effort is needed in this direction to keep him acquainted with the changes in our ageing population, the effects that urbanization of society will have upon medical practice, the growth of the numbers of incurable and chronically ill patients, the breakup of the family as a unit in American life, the intelligent use of the modern community hospital, the contributions which public health and other agencies can make to medical practice as a whole, the role of mass screening and multiphasic screening programs being carried on in many communities, and lastly—but highest above all—the development of a profound understanding and sympathy for the sick and afflicted as individual human beings, not as victims of some disease. Attention to these factors may, ultimately, prove to be one of the most important attributes that graduate medical education will contribute to the maintenance of our profession as we know it today.

Modern Foreign Language Study in the Premedical Curriculum

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Many premedical advisers and students believe that there is a uniform policy by the medical schools in regard to their language prerequisites. The survey reported here indicates clearly that this is not so. In fact, almost half of the schools no longer require any foreign language for admission. More schools are recognizing officially that the value of a foreign language is mainly cultural.

Contrary to the general assumption of many college administrators, premedical advisers, and student counsellors in high schools, a reading knowledge of either French or German is no longer a strict requisite for admission to all medical schools. A study made in 1934 and 1935, the results of which were printed in the November issues of the JOURNAL during those years, determined that 15 schools then had no language requirements at all, while many others accepted the study of any modern language on an equal basis. Most of the schools did urge, however, a reading knowledge of either French or German.

While the 1934 study revealed that the reason for preferring French or German for medical students was the medical and scientific literature in those languages, it was recognized that most students entering medical schools did not have sufficient command of either language to read technical material. As a consequence, it was agreed that the main value of foreign language study in the premedical curriculum was cultural rather than scientific. It was then suggested that Greek, Latin and all modern languages be placed on an equal basis, as they were adaptable to students' personalities.

Dr. Zapffe, the late editor of the JOURNAL, always felt that the modern language requirement was a farce, since it was not lived up to by many medical schools. He added that only a linguistic genius could acquire a worthwhile knowledge of any language in the six or even twelve semester hours that were required and that demanding only a reading knowledge was "wholly fantastic." As an after-note, it should be pointed out that in 1932 the Council on Medical Education and Hospitals of the American Medical Association dropped its modern language requirement, in conformance with the standards of the Association of American Medical Colleges.

Current Data Compiled

In order to discover what changes have taken place since the time of the last study, I consulted medical college catalogs and corresponded with many medical educators, deans and administrative officers of medical schools. I specifically urged that German, Italian, French, Spanish and Russian be placed on an equal footing as a premedical require-

ment. If Italian were not acceptable, I asked to be informed of the Admission Committee's policy in this matter.

The following table indicates the present situation in regard to modern language requirements:

MEDICAL SCHOOL LANGUAGE REQUIREMENTS

	Number of Schools
No Foreign Language	35
Any Foreign Language	13
Any Modern Language	8
French or German	9
French, German or Spanish	8
French, German, Spanish, and/or Latin or Greek	3
French and German	1
Latin or Greek	1
French, German, Spanish or Italian	1
French, German, Spanish or Russian	1
Total:	80

Some schools which require no language, but recommend or urge one strongly, as follows:

Jefferson Medical College, Creighton University School of Medicine and the University of Oregon School of Medicine strongly recommend French or German.

Cornell University Medical College recommends familiarity with any two languages.

Saint Louis University School of Medicine prefers its applicants to have a knowledge of German.

The University of Pittsburgh School of Medicine urges a knowledge of any modern language.

Georgia Medical College recommends a knowledge of any modern language, and either Latin or Greek.

Eleven other medical schools recommend a knowledge of any language. These include: Baylor, Duke, Emory, Iowa, Loyola, Meharry, Minnesota, Oklahoma, Texas and Washington. The University of Chicago requires 15 hours of humanities in addition to 12 hours of English literature and compensation, but does not specifically require a language.

Most of the other schools which do not require a language for admission do recommend courses in the humanities, although not specifically recommending a language.

Many deans and other medical educators were at a loss to explain the rationale of their school's language prerequisites. Others pointed out that their schools were bound by existing state requirements. Still others said that, since students were limited to state residents, the language requirements were largely determined by the scholastic opportunity. This was true in the case of the University of Arkansas. Dr. Jeff Banks explained that most of the students in the medical school, receiving their premedical education in schools within the state, were limited by the languages being offered in those schools. A similar explanation was given by Dean Donald Slaughter of the University of South Dakota School of Medicine. Mr. Herb Weatherby of the University of Kansas School of Medicine stated that there was only a slight interest in Italian or Russian and that most students in the medical school are state residents. He ventured to say that an otherwise qualified student with credits in either of these languages would probably be accepted.

Prerequisites Arbitrarily Established

One dean explained that his school required French, German or Spanish because this conforms with the recommended policy of the Association of American Medical Colleges.* In a similar effort to conform with an established policy, Marquette University School of Medicine requires two years of either French or German, in accordance with the rules of the Wisconsin State Board. At the University of Wisconsin two years ago, the medical faculty voted to retain the French or German prerequisite. This

*Actually the AAMC has no language requirement. Subsection I, Constitution and By-Laws, p. 11, states, "The minimum of collegiate credit required for entrance to medical schools and colleges in membership in the Association shall be not less than two full academic years, which shall include English, theoretical and practical courses in physics and biology, and in general and organic chemistry, completed in institutions approved by accrediting agencies acceptable to the Executive Council of the Association."

has now been modified so that the language requirement in the School of Medicine is in conformance with the requirements of any of the undergraduate schools for either the BA or BS degree. Dean Middleton agrees that the chief value of language study at the present time is cultural.

The Medical School of the University of Michigan follows the requirements of the Michigan State Board of Registration and Licensure which demands one college year of either French, German, Spanish, Latin or Greek.* Mr. Wayne Whitaker, secretary of the school, feels that language study is one of the necessities for true education, but cannot explain the reason for not including any modern language, other than the need to conform to rule.

At the University of Mississippi, Dean D. S. Pankratz would like to suggest that students pursue Greek for a year or two, but because the school must transfer its students after the second year, he favors training in any of the modern languages, strongly urging French or German. At the University of Pennsylvania School of Medicine, the formal requirements are for a reading knowledge in either French, German, Spanish or Russian. In actual practice, according to Dean Mitchell, the Admissions Committee is always willing to accept some other important language.

Trend Away from Requirements

Numerous schools have begun to take the position that, since language requirements are cultural in value, there is a genuine question whether or not they should be insisted on at all. In fact, 35 medical schools no longer demand a foreign language. At Saint Louis University School of Medicine the requirement has been abandoned. Father Edward T. Foote, S.J., chairman of the Admissions Committee, takes the position that, at least for his school, this indicates a kind of acquiescence to the prevailing dominant trends in pre-professional education.* On the other hand, at the University of Southern California, while there has been some discussion of abandoning the language requirements, the present policy of the committee is to accept only French or German, with Latin as the only acceptable substitute. Stanford retains the French or German requirement, although there is a growing feeling that, so long as the worth of this kind of study is mainly cultural, there may not be any reason for insisting on any language whatever. Temple University School of Medicine, while preferring French, German or Spanish, is willing to accept any modern language credit. This is also true at Bowman Gray, where the stated requirements specify French, German, Spanish, Greek or Latin. At Wayne University, where Latin, French, German or Spanish are required, Rudolf J. Noer, assistant dean of the College of Medicine, can offer no explanation for the exclusion of Italian or Russian. Although Italian at present does not satisfy the language requirement for admission to the State University Medical Center at New York (formerly the Long Island Medical College), Dean Duncan W. Clark believes that the suggestion that Italian be given the same status as the other languages is a useful one, and promises to refer it to the Admissions Committee of the College. At Maryland, where

*Explicit requirements at the Universitty of Michigan do not limit the choice of language except to specify that the work must have been done on the collegiate level.

*While there is no requirement for a language at Saint Louis, the candidate is strongly urged to have a knowledge of at least one, preferably German.

the requirements state any language, the Admissions Committee ordinarily accepts Italian, French, German or Spanish credits without offering any explanation for the exclusion of other major languages.

Conclusions

It appears, on the basis of this study, that medical schools are not at all in agreement about the specific languages to be required, or indeed, whether or not any language requirement is necessary. Some schools cling to traditional French or German, some of them in the hope that the languages may again be used for the reading of scientific literature. Most medical schools, however, have liberalized their language requirements with the realization that language studies contribute primarily to the general education of the medical student, rather than to his professional abilities. Some of the schools that still require one language in lieu of any other are now contemplating a broadening of their entrance requirements in the light of the changing concept of the use and value of a foreign language in the preparation of the student for the study of medicine.

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A Dangerous Trend

To meet the rapidly rising costs of operation, a number of medical colleges are giving serious consideration to a plan which would call for marked raises in tuition charges; the students being permitted to repay deferred tuition notes over a period of years.

Quoted in support of this plan are the figures recently released by the Office of Business Economics of the U. S. Department of Commerce and the Bureau of Medical Economic Research of the American Medical Association. These data show that in 1949, physicians in civilian practice in the United States had an average net income, before taxes, of $11,058. It is argued that the medical student, able to look forward to an average net income in the five-figure bracket, should be willing to mortgage his future for the privilege. From this point of view, annual tuition charges of $1,250 to $2,500 are in order. Present charges range between $400 and $800.

It cannot be denied that there is some merit in this argument, but for good reasons the principle of charging the medical student prorated costs of maintenance of the medical school is wrong. First of all, it is unfair to the student. Secondly, the practice tends to commercialize the student's attitude toward his profession at the very onset of his career.

Anderson, Manlove and Tipner* estimate that the present median tuition fee of $660 pays 21.9 percent of the $74,350,000 annual budget of the medical and basic science schools of the United States. Taking into account the research activities, care of the indigent ill, and teaching of non-medical students included in this figure, it is certainly open to question whether or not medical students can fairly be expected to contribute much more than current tuition rates. Moreover, students each year are compelled to spend a sum approximately twice the tuition charge for such particulars as fees, books, microscope rental, instruments, room, meals and laundry. The student who is charged his prorated share of the annual cost of maintaining the medical school and signs deferred tuition payment notes, is apt to find himself after four years' study of medicine already several thousand dollars in debt. This will obviously preclude, in many instances, all but the most meager period of internship or residency training.

A far more important reason for decrying the trend toward skyrocketing tuition fees has already been mentioned. This is the tendency to commercialize the student's attitude toward his profession. In effect, the student is required to mortgage his future to repay the medical school for costs not directly related to his instruction. As a result, he may desire to recompense himself as rapidly as possible at society's expense. The risk in such "hard-boiled" financing is that both the student and society may be the losers.

* Donald G. Anderson, Francis R. Manlove, Anne Tipner. "Medical Education in the United States and Canada 1950-51", Journal of the American Medical Association, Chicago, Sept. 8, 1951.

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Borden Award Presented

Dr. Edwin Bennett Astwood, research professor of medicine at Tufts College Medical School, was presented on October 29 with the 1951 Borden Award in medical science, at the Association's annual dinner. W. A. Wentworth, secretary of the Borden Company Foundation, Inc., made the presentation.

Dr. Astwood is especially renowned for his work in hyperthyroidism; the main basis for his selection being his development and clinical application of propylthiouracil.

Creative, imaginative and careful, Dr. Astwood is a worthy addition to the list of Award winners, which now includes Vincent du Vigneaud (1947), George N. Papanicolaou (1948), Fuller Albright (1949), and Gerty T. Cori (1950).

General News

Fellowship Announcements

The third annual *John Hay Whitney Opportunity Fellowships Program* was announced on October 3. The program provides $100,000 this year for fellowships to American citizens "who because of race, religion or region of residence have not had the opportunity to develop their talents." The fellowships, to range from $1,000 to $3,000, will go first to applicants under 35 years old who are Negroes, Indians, Japanese-Americans, or Chinese-Americans. Applications should be submitted before November 30; obtainable from the John Hay Whitney Foundation, 30 Rockefeller Plaza, New York City.

The *Air University*, in cooperation with the Board of Control for Southern Regional Education, is offering a program of Air University Fellowships, visiting professorships and research grants. The fellowships range from $3,100 to $3,825 per year and are renewable. In medicine, awards are available for work in both the basic science and clinical disciplines. Further information is obtainable from the Executive Secretary, Committee on University-Agency Relations, Board of Control for Southern Regional Education, 830 Peachtree Street N.W., Atlanta, Georgia.

The *American Urological Association* offers awards of $500 first place, $300 second place and $200 third place, for essays on the result of clinical or laboratory research in urology. Competition is limited to urologists in practice not more than five years, and to men in training to become urologists. Essays must be submitted before February 15, 1952. For full particulars write Dr. Charles H. de T. Shivers, Boardwalk National Arcade Building, Atlantic City, New Jersey.

A limited number of *National Foundation for Infantile Paralysis* fellowships are available for United States citizens of sound health who have an M.D., Ph.D., or equivalent degree. Stipends range from $3,600 to $7,000 per year, with marital and dependency status being considered. Institutions which accept fellows receive additional compensation for expense incurred in relation to their training programs. Complete information may be obtained from Division of Professional Education, The National Foundation for Infantile Paralysis, 120 Broadway, New York 5, New York.

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Pediatric Research Aided

As a result of a survey conducted by the American Academy of Pediatrics, with the cooperation of the USPHS and the United States Children's Bureau, which showed that pediatrics departments in medical schools received between 2 and 8 percent of the school budgets, the International Latex Corporation decided to establish the Playtex Park Research Institute. The Institute, now in its second year of operation, allocates grants to support men of promise and research which may be regarded as initiatory in character or giving promise of opening new fields of value in pediatrics. Funds for the Institute are allotted from earnings of the corporation and grants are made as the result of decisions of the governing board. The board is made up of 18 recognized leaders in pediatrics. More information may be obtained by writing to the Playtex Park Research Institute, 6415 Empire State Building, New York 1, New York.

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More Student Deferment Tests

Arrangements have been completed to conduct the Selective Service College Qualification Test again on December 13, 1951, and on April 24, 1952. Applications for the test should be postmarked no later than midnight Monday, November 5, 1951 for the December test, and no later than midnight Monday, March 10, 1952 for the April examination. Registrants who have previously taken the test are not eligible to take it again. More details on procedure are available in Number 108 of the

American Council on Education Bulletin, "Higher Education and National Affairs."

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Civil Service Openings

A series of United States Civil Service positions are now open to physicians, ranging from rotating internships to specialist positions. Openings in St. Elizabeth's Hospital, Washington, D. C., for interns, psychiatric, surgical or general practice residents are now available, ranging from $2,200 to $4,700 per year. Information is contained in Announcement No. 300.

Announcement No. 217 lists positions for medical officers, $5,400 to $6,400 annually, in the various Federal health agencies. Appointments are available in 31 fields, by examination.

An examination for Medical Officer (Specialist), is announced in Circular EC-24. Salaries range from $7,600 to $10,000. Appointments are available in 31 fields.

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Netherlands Schools Crowded

The medical departments of the Universities of Leiden, Amsterdam, Utrecht and Groningen had approximately 250 American students enrolled with the start of the fall sessions. This represented the largest contingent of Americans ever to study in the Netherlands and has caused the schools to require minimum undergraduate grades of "B" for entry, the first time in Dutch history that restrictions have been placed on admissions. The schools are on the approved list of foreign schools of the AAMC and the AMA.

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Racial Bar Attacked

Dr. *C. Lydon Harrell,* president of the Medical Society of Virginia, attacked the organization's bar against Negro physicians as unjust, undemocratic and un-Christian in an address at the group's annual convention at Virginia Beach. Dr. Harrell told delegates that the word "white" should be deleted from membership requirements of the organization. Earlier, the House of Delegates asked all local societies in the state to consider and report at next year's meeting whether they will admit "well-qualified Negro physicians" of their respective communities to membership and whether they wish to delete the word "white" from the state society's constitution.

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World Health Organization

At a cost of about $10,000,000, 37,000,000 persons have been tested and 17,000,000 vaccinated with BCG vaccine against tuberculosis by three Scandinavian relief agencies in conjunction with the International Children's Emergency Fund. The work was carried on in 22 countries on five continents. Four Iron Curtain countries, Czechoslovakia, Poland, Hungary and East Germany, participated in the project. Future phases of the campaign will be carried on with WHO assuming responsibility for the technical details.

Dr. *Leonard Scheele,* surgeon general of the Public Health Service, urged recently that the United States continue to support public health programs in other countries. Dr. Scheele said that the money spent by this country for international public health was more productive in end-results and good-will than any we spent in the whole international field. Citing the needs of other countries, Dr. Scheele pointed to Indonesia, where there are 73,000,000 persons, only 700 doctors and 24,500 hospital beds.

The budget adopted for the Pan American Sanitary Bureau for 1952 is $1,943,681, the same as the current figure. The amount will enable the Bureau to go ahead with the present 76 public health field programs and the 42 others being planned. Some of the funds in the 1952 budget represent a first repayment of the interest-free loans from the Rockefeller and Kellogg Foundations for the purchase of the new headquarters buildings in Washington, D. C.

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Hospital Survey Set

A comprehensive study of financing and cost aspects of the nation's hospitals will be made under the auspices of the American Hospital Association, as a result of action taken at the annual convention in St. Louis. Gordon Gray, president of the University of North Carolina, will serve as chairman of the study commission, and Graham L. Davis, director of the division of hospitals

of the W. K. Kellogg Foundation, will serve as study director. The program will extend for a two-year period at an estimated cost of $500,000.

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Labor-Management Unite for Health

A program described by the American Hospital Association as unprecedented in this country has been established in two New York counties by creation of the Long Island Industry Fund. Designed to meet the emergency need for increased hospital facilities in Nassau and Suffolk counties, the program calls on the 110,000 industrial employees of the area to purchase memberships in the Fund for $5 each. The 400 local corporations will also be approached for corporate gifts. Funds raised in this initial drive will be distributed among construction and equipment projects of all local non-profit hospitals on a matching percentage basis.

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Rockefeller Foundation Grants

Appropriations by the Rockefeller Foundation for 1950 totaled $11,247,964. This amount included expenditures of $2,326,840 for public health, $1,240,900 for the medical sciences and $2,092,515 for natural sciences. The program in the medical sciences in 1950 again emphasized psychiatry, neurology and physiology, with almost half of the funds appropriated in medicine being expended in these three fields.

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Heart Association Grants

The American Heart Association has announced 60 new research grants this year totaling $311,912. Most of the funds have been concentrated in the fields of arteriosclerosis, hypertension and rheumatic fever.

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Marshall Favors Federal Aid

The following letter was written by then Secretary of Defense *George C. Marshall* to Senator *James E. Murray*, chairman of the Senate committee on labor and public welfare. In the letter, Secretary Marshall stated his reasons for favoring Federal aid to medical education in a form "as generally acceptable as possible to both the medical schools and the profession at large." The letter was dated July 25, 1951.

My Dear Senator Murray:

I know that you recall the critical shortage of physicians and dentists in the civilian economy of our country during World War II. . . .

Under the present situation, the military requirements for men under arms and physicians and dentists are, of course, far less than during the recent world war. Also, under the leadership of the Armed Forces Medical Policy Council, substantial steps have been taken in the military departments to increase the effective utilization of physicians and dentists. Wherever possible, mobility of our professional personnel is substituted for large numbers on standby. . . .

Even with these major savings by the military departments, the total national resources in physicians, dentists and nurses will, in my opinion, be well below that necessary to meet both the requirements for heightened civilian production and the larger standing military forces during the present emergency or for a full-scale mobilization. In addition, there is a much greater threat of large-scale civilian disasters resulting from the existence of more modern weapons. . . .

Under these conditions, it seems prudent to use every means of assuring that high standards of professional training be maintained in our professional schools and, further, to assure ourselves that professional schools will continue to accept and instruct the maximum numbers of students which their faculties and other educational facilities can accommodate. I am convinced that federal aid to medical education in a form as generally acceptable as possible to both the medical schools and the profession at large is essential to accomplish this purpose.

As you know, the Department of Defense has previously expressed its support of federal aid to medical education in a letter from Secretary of Defense Louis Johnson, dated August 8, 1950, . . . and in a letter from Assistant Secretary of Defense Marx Leva . . . on March 20, 1951.

Secretary Johnson wrote:

". . . . I feel that it would be wise for the Congress to provide for an orderly increase in the size of the medical professions. . . . the Department of Defense favors the principles of aid to medical education. . . ."

Assistant Secretary Leva wrote:

". . . . The Department of Defense always has favored the principles of aid to education in those critical scientific and technological fields on which the future health, welfare and safety of the nation may well depend."

I wish to go on record in support of the above statements. I believe it is definitely in the national interest to provide federal aid to medical education and hope that your committee can take early and favorable action on legislation which will accomplish this end.

Faithfully yours,

(Signed) *G. Marshall*

College News

Albany Medical College

Because of the need to obtain more funds than could be allocated to it from the Community Chest campaign, Albany Hospital did not participate this year. The decision was reached jointly by *Frank W. McCabe,* president of Albany Hospital, and Stuart W. Cooper, president of the local Community Chest. President McCabe explained that the hospital was now serving not only the people of Albany but also patients from 16 surrounding New York state counties and parts of Vermont, Massachusetts and Connecticut. He stated that support should come from the entire area the hospital serves. Any membership in a local Community Chest prevents the member organization from carrying on its own campaign for funds, except for capital funds.

Dr. *Gordon W. Searle,* formerly an assistant in physiology at Northwestern University School of Medicine, has been appointed assistant professor of physiology. Dr. *Lucile Williams,* formerly instructor of pharmacology at Creighton School of Medicine, has been appointed assistant professor of pharmacology.

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Boston University

Dr. *William C. Boyd,* professor of immuno-chemistry, has received grants totaling $21,992 for work on synthetic blood reagents. Dr. *Sanford B. Hooker,* professor of immunology, has received a continuation grant of $6,000 from the Public Health Service, enabling him to continue research in serology of the atopic state. Dr. *George L. Maison,* professor of pharmacology, received a continuation grant of $7,506 for work on methods of reviving the fibrillating heart. Dr. *Robert W. Wilkins,* associate professor of medicine, received a third grant, $14,407, to continue hemodynamic studies in health and disease, especially hypertension. Additional Public Health Service grants totaling $5,600 were also announced.

Bowman Gray

During the month of September, Bowman Gray School of Medicine celebrated its 10th anniversary. Successor to the two year Wake Forest College School of Medical Sciences, the present school was made possible by gifts from the late Bowman Gray of Winston-Salem. On August 4, 1939 the resources of the Bowman Gray Foundation were made available with the provision that the medical school be relocated in Winston-Salem. The school opened there in September 1941 and the members of the Gray family have continued their interest and support. Their gifts have included Graylyn, a hundred acre estate, presently being used by the department of neuropsychiatry for a hospital and clinic.

The teaching hospital of the School of Medicine, North Carolina Baptist Hospital, is, along with the school itself, a part of the Baptist State Convention of North Carolina. Opened in 1923 with 84 beds, the hospital has since been expanded to 300, and in September ground breaking ceremonies were conducted for the addition of another 150 bed wing.

The present enrollment at the school is 188, as compared with the 1941 figure of 73. Fifty-six freshmen were accepted this term. The nine graduating classes to date have produced 383 M.D.'s.

Dr. *Coy C. Carpenter,* dean, was honored by the faculty during the course of the celebration and the Coy C. Carpenter Emergency Student Loan Fund has been established.

At a public banquet on September 27, Mr. *John M. Russell,* executive director of the John and Mary R. Markle Foundation, paid tribute to the contributions of Bowman Gray School of Medicine to community health and welfare and to medical education.

On October 15, as a result of action taken by trustees of the Smith Reynolds Foundation, ground breaking exercises were held for the new quarters of Wake Forest Col-

lege in Winston-Salem. This move will again unite the College and the School of Medicine.

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University of Buffalo

Chancellor *T. Raymond McConnell* recently announced establishment of a department of physical medicine and rehabilitation at the Chronic Disease Research Institute of the School of Medicine. Dr. *Henry V. Morelewicz* has been appointed chief of the new department. Dr. Morelewicz was formerly associated with the New York University Institute of Physical Medicine and Rehabilitation. Dr. *Arthur Edson MacNeill* has been designated the new chief of laboratories, and Dr. *Charles W. Bishop* has been named head of the department of biochemistry and assistant laboratory director of the Institute.

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University of California, L. A.

Incoming students at the nation's newest medical school began learning from patients from the first week of the new school year. Following a plan of Dean *Stafford L. Warren,* each student was assigned to a pediatric patient, whom he will study under the guidance of a staff member. Teaching of anatomy will be integrated with radiology and orthopedic work by the staff, and teaching will be integrated in every way possible. At present there are 28 students and 25 teachers at the school.

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University of California, S. F.

Dr. *Gordon E. Hein,* clinical professor of medicine and member of the faculty since 1916, retired from active teaching at the end of September. He was honored at a testimonial dinner.

The 70 million volt synchrotron purchased with funds from AEC has arrived at the School of Medicine and is being assembled. Dr. *Robert S. Stone,* professor of radiology, is director of the project. The machine is scheduled for use early in November. Dr. *W. Edward Chamberlain* spent the month of October as visiting professor of oncology.

Dr. *Peter H. Forsham,* formerly associated with Harvard Medical School, was appointed director of the Research Laboratory in Arthritis and Allied Diseases, effective October 1. Dr. *Arne Tiselius,* of the University of Upsala, Stockholm, has been named Hitchcock lecturer for the fall semester. Dr. Tiselius, a biochemist, was awarded the Nobel Prize in chemistry in 1948 for his work on electrophoresis and adsorption analysis.

The 13th and 14th stories of the Herbert C. Moffitt Teaching Hospital will now be completed at the same time as the rest of the structure. Originally planned to be erected in skeleton form, the two stories can be completed because of an additional grant of $664,794.25 from the Board of Regents. The two floors will contain a total of 96 beds, plus nursery facilities and provisions for rooming-in of mothers.

Dr. *David A. Wood,* formerly of Stanford, was appointed director of the Cancer Research Institute, effective September 1. Dr. *Hamilton Anderson,* chairman of the division of pharmacology, returned to San Francisco after a year as dean of the medical faculty of the American University at Beirut, Lebanon. Dr. Anderson called the University one of the strongest bulwarks of American good will in the Arab world. In addition to his teaching and administrative duties, Dr. Anderson carried on research in Beirut on leprosy, tuberculosis and amebiasis, using new antibiotics. Dr. *William C. Deamer,* professor and chairman of the department of pediatrics, will study pediatric pathology at the Pathological Institute of the University of Zurich during the coming year.

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Chicago Medical School

Dr. *William S. Kroger,* formerly associated with the University of Illinois College of Medicine, has been appointed to the faculty as assistant professor of gynecology.

The following promotions were effective October 1: To professor: Dr. *Piero P. Foa,* physiology and pharmacology. To associate professor: Dr. *Aldo A. Luisada,* medicine; Dr. *Jay A. Smith,* physiology; Dr. *Ruth Weyl,* anesthesiology. To assistant professor: Dr. *David Presman,* urology; Dr. *Isadore Spinka,* neurology; Dr. *Harry Weisberg,* pathology. To associate: Dr. *Gordon Cher-*

witz, pediatrics; Dr. *Herman L. Eisenberg,* medicine.

Dr. *David M. Cohen,* professor of dermatology and syphilology, will administer a grant of $2,100 to be used for the study of fungus infection. The grant was made by the Lasdon Foundation, Inc.

Bruce Wesley Dickson, registrar of the school, died suddenly on September 1. Mr. Dickson had been a member of the staff since 1936. Dr. *Paul H. Wosika,* associate professor of medicine, died in a plane crash on September 8. He had joined the faculty in 1942.

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University of Cincinnati

Dr. *Vinton E. Siler,* assistant professor of surgery, reporting his findings on the effects of atom bomb explosions in Hiroshima and Nagasaki, says that the main obstacle in solving the problem of civil defense in atomic warfare is the "sheer volume" of the task. Dr. Siler pointed out that 43 percent of a total population of 500,000 in the two cities were injured, half of them fatally. Burn victims were the most frequent casualties of the bombings. In the event of such an attack, he reports, sterile technique will have to be abandoned, with reliance being placed on antibiotic and chemotherapeutic agents.

Dr. *Sol Sherry,* formerly of the New York University College of Medicine, has been appointed assistant professor of internal medicine and director of the May Institute for Medical Research.

Beginning December 3, Dr. *Frank R. Dutra,* associate professor of forensic pathology, will direct a four day course for police officers in the scientific detection of homicide.

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University of Colorado

Dr. *John Berry,* associate professor of medicine, is chairman of the committee for the new heart center currently being built as a third floor of the Verner Z. Reed Outpatient Clinics. The new center was made possible by a grant of $250,000 from the National Heart Institute and is expected to be completed by January, 1952.

Four new postgraduate medical courses have been added to the education program, according to Dr. *Charley Smyth,* director of graduate and postgraduate education. In addition, the weekly seminars in pathology–physiology are continuing to be held every Tuesday night through December 18, and the weekly Thursday seminars in neuroanatomy will also continue through December.

Appointments: Dr. *George Milton Shy,* assistant professor of neurology, department of medicine; *Arnold Feldman,* formerly of Mayo Clinic, instructor in radiological physics, department of radiology; and Dr. *Seymour Levine,* instructor in biophysics.

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Columbia University

Dr. *Elliott S. Hurwitt,* clinical professor of surgery, has received a grant of $18,000 from the Playtex Park Research Institute for research on the regulation of the blood supply to impaired kidneys and liver of infants. Drs. *H. B. Van Dyke* and *Richard Day* have received a two year grant of $10,000 from the Institute to study the role of the antidiuretic hormone in physiological conditions and diseases in infancy and childbirth.

Dr. *James E. McCormack* has been appointed associate dean of graduate studies and assistant professor of medicine, effective September 1. Dr. McCormack was formerly assistant to the director of the NYU College of Medicine postgraduate division. Dr. *Carl T. Nelson,* professor of dermatology, has been appointed executive officer of his department to succeed the late Dr. *A. Benson Cannon.*

A College of Physicians and Surgeons graduate, Dr. *J. Clarence Chambers Jr.* has been appointed superintendent of the 275 bed, New York City-owned James Ewing Hospital. Dr. Chambers is the first Negro to be named to such a post in the history of the New York City department of hospitals. Dr. *John J. Honan Keating,* director of medicine at St. Luke's Hospital and former clinical professor of medicine, has been elected to a six year term on the board of trustees as one of the six representatives of the alumni.

Cornell University

Dr. *Henry L. Barnett,* associate professor of pediatrics, has received a grant of $15,000 from the Playtex Park Research Institute to conduct a three year investigation of kidney function at birth and the developmental pattern in normal infants and those with kidney disorders.

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Duke University

"The Compleat Pediatrician" by Dr. *Wilburt C. Davison,* dean of the medical school, already in its sixth American edition, will soon be published in Japan. The book has been translated by four Japanese physicians.

Three one-day meetings this fall will replace the Medical School's traditional Annual Symposium for practicing physicians. The first meeting, on October 13, was presided over by Dr. *V. H. Duckett,* Canton, North Carolina, with Dr. *Clemens A. Benda,* clinical director of Walter E. Fernald State School, Waverly, Massachusetts, and Dr. *Woodard D. Beacham,* clinical professor of obstetrics and gynecology, Tulane University School of Medicine, as guest speakers.

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Emory University

The School of Medicine has established a preceptorship for senior students to orient them to conditions of practice in rural medicine. Selected students will study for a month under a general practitioner outside the metropolitan area of Atlanta, accompanying the physician on his rounds and assisting in office calls.

The School of Medicine is also introducing an experiment in environmental medicine. Each student will be assigned a patient with a chronic illness, to follow throughout the student's medical school training. An attempt will be made to tie social and economic background, family problems, and the illness itself, into a whole unit.

Dr. *James Edgar Paullin,* professor emeritus of clinical medicine, died August 13 in Atlanta. He was 69 years old. Dr. Paullin had attended President Franklin D. Roosevelt in his last illness. Dr. *Morris Schaeffer,* formerly at New York University, has accepted appointment as associate professor of bacteriology and immunology.

Recent promotions: To professor: Dr. *James V. Warren,* medicine. To assistant professor: Dr. *Richard W. Blumberg;* Dr. *Joseph H. Patterson.*

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Medical College of Georgia

A symposium on exfoliative cytology, cancer detection and diagnosis has been announced by Dr. *G. Lombard Kelly,* president of the college. The symposium will be held the week of December 9, with an additional week optional for laboratory work. Dr. *H. E. Nieburgs,* director of the department of clinical cytology, will direct the symposium. Guest lecturers include Dr. *Peter A. Herbut,* professor of pathology, Jefferson Medical College; Dr. *Paul Wermer,* secretary of the AMA Committee on Research; Dr. *Willis E. Brown,* professor of obstetrics and gynecology, University of Arkansas Medical School; Col. *Joe M. Blumberg,* pathologist, Walter Reed General Hospital; and other authorities.

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George Washington University

Dr. *Walter A. Bloedorn,* dean of the School of Medicine, has been named a member of the Advisory Committee on Medicine and Public Health of the W. K. Kellogg Foundation.

A Public Health Service grant of $11,052 will be used to train medical students and residents at Children's Hospital to manage the emotional problems of children. Dr. *Reginald S. Lourie,* associate in pediatrics and psychiatry, will direct the program. This grant was one of a total of $83,492 recently received from the National Institutes of Health. Four of the others were renewals for the fourth consecutive year.

Dr. *Domenico Antonio Adovasio,* of the Free Territory of Trieste, has been named a fellow in thoracic and cardiovascular surgery under an education exchange grant from the Federal Smith-Mundt program. He will work under the supervision of Dr. *Brian Blades,* professor of surgery.

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Hahnemann Medical College

Nine appointments have been made to the full-time faculty. These include Dr. *John W. Van Dyke,* professor of anatomy;

Dr. *Russell W. Weller,* assistant professor of pathology; Dr. *D. Peter Oesper,* assistant professor of biochemistry; and Dr. *Harry Goldberg,* assistant professor of physiology and clinical physiologist to the hospital. Other new appointments are Dr. *Catherine Lewis,* instructor in clinical pathology; Dr. *James Bowie Donaldson,* associate in medicine; Dr. *Daniel J. Marino,* instructor in medicine; Dr. *W. Robert Penman,* instructor in the division of women; and Dr. *Arthur Wase,* research associate in biochemistry.

A grant of $18,000 from the National Council of Brith Sholem Women will establish a clinical laboratory for cardiovascular and pulmonary research, under the supervision of Dr. *Charles P. Bailey* and Dr. *Harry Goldberg.* Dr. Bailey will also supervise a $25,000 grant from the USPHS for the development of a heart-lung apparatus and the surgical collection of inflammatory valvular disease and congenital defects. Other recent grants include a Public Health Service grant of $5,000 to the departments of anatomy and physiology, an anonymous gift of $10,000 to enable Dr. *Harry E. Banghart* to conduct clinical studies of bone metabolism in health and disease, and a $500 gift from the Centaur-Caldwell Division for clinical investigation by the department of pediatrics under Dr. *Carl C. Fischer.*

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Harvard Medical School

Dr. *Henry A. Christian,* emeritus physician-in-chief of Peter Bent Brigham Hospital and former dean of Harvard Medical School, died on August 24 at the age of 75. From 1908 to 1939 Dr. Christian served as Hersey professor of medicine.

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Howard University

Plans for a $4,000,000 200 bed interracial hospital have been announced recently by Rev. Amos H. Carnegie, founder and president of the National Hospital Foundation, Inc. The Washington, D. C. hospital is predicated on obtaining a $2,000,000 grant from Congress which will be matched by the contributions of Negroes throughout the country. Rev. Carnegie said that the hospital would be interracial in the sense that both Negro and white physicians would be on its staff and that it would accept patients of all races, but that its primary function would be to serve a community of 80,000 Negroes in the northeast sector of Washington who are not now provided with adequate health facilities. A formal application with Howard University as a teaching hospital has already been made. Affiliations with Georgetown and George Washington Universities have also been requested.

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University of Illinois

Ten entering students at the College of Medicine were admitted under the program sponsored jointly by the Illinois Agricultural Association and the Illinois State Medical Society. The program is designed to enroll more students from rural areas in medical schools and to return them to their native areas to practice. In all, 752 applications to medical school were received this year, of whom 560 met the minimum 84 percent qualification requirement. The number accepted, 166, is the same as in previous years. Almost all the accepted students have academic averages of at least 88 percent for their premedical instruction. The accepted students were all residents of Illinois, with a sharp drop reported in the number of veterans admitted. Eleven women were accepted for the 1951 class.

Seven members of the faculty have been promoted to the rank of full professor: Dr. *Geza De Takats,* surgery; Dr. *M. I. Grossman,* clinical science; Dr. *J. E. Kempf,* bacteriology; Dr. *Adolph Rostenberg Jr.,* dermatology; Dr. *Max S. Sadove,* surgery; Dr. *Walter H. Theobald,* otolaryngology; Dr. *Willard Van Hazel,* surgery.

Dr. *George B. Hassin,* professor emeritus of neurology, died on August 15 in Chicago. He was 79. A memorial service for Dr. Hassin was held on September 23, with Drs. *Leo Kaplan* and *Percival Bailey* as speakers.

Five USPHS grants to the College of Medicine have recently been announced. These include a grant of $23,191 to continue study of the effects of the betatron beam on bone and cartilage, and a grant of $15,816 to study the effects of the beam on

the central nervous system. Dr. *Cecil A. Krakower* will direct research made possible by an award of $14,206 for investigation of the antigenic and chemical qualities of rounded masses of tissues formed in the kidney. An investigation of kidney stones will continue with renewal of a $7,110 grant. A new grant of $4,158 has been made to Dr. *Arthur Kirschbaum* for a study of the tissue susceptibility of mice to stimuli which produce cancer.

The new $6,000,000 Medical Center Steam Plant, first of nine major projects under construction in the West Side Medical Center District, has been placed in commercial operation. Equipped to provide heat for the entire Center, the plant has three 90,000 pound-per-hour boilers, with auxiliaries.

An initial grant of $7,500 has been made to Dr. *Harry A. Waisman* by the Playtex Park Research Institute for research on acute leukemia.

Dr. *Robert W. Keeton,* retiring professor and head of the department of internal medicine, was honored October 4 at a testimonial dinner attended by over 400 colleagues and friends. Dr. *Anton J. Carlson,* Vice-president *Andrew C. Ivy,* Dean *Stanley W. Olson,* and Provost *Coleman R. Griffith* were among the speakers.

On October 12 and 13 a symposium was held on education in the medical sciences. The program included seminars on dental and medical education and a conference on opportunities in the health sciences, with Dr. *Stanley W. Olson,* dean of the College of Medicine, acting as moderator. Among the conferees were Dr. *M. V. Novak* and *Tom Jones.* On October 13 Dr. *Carl C. Pfeiffer* spoke on the subject, "Advances in the Medical Sciences" and *C. Lincoln Williston* delivered a short talk on "The Medical Center."

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Indiana University

Grants totaling $68,267 for research and equipment in the James Whitcomb Riley Hospital laboratories have been announced by the Riley Memorial Association. Two new laboratories, one in pediatric biochemistry, the other in orthopedic surgery, will be established by the grants.

Dr. *Harold Johantgen* assumed his new duties as director of the new Medical Center student-employee health service. Dr. *T. S. Malinowski,* fellow in gastro-enterology and assistant professor of military science and tactics, has been promoted from major to lieutenant colonel in the Medical Corps of the United States Army.

With the start of the fall semester, there is an enrollment of approximately 430 on the Indianapolis campus and a class of 150 freshman medical students at Bloomington. The extensive remodeling work which had been going on at the Medical Center during the summer is near completion.

A postgraduate course on "Early Detection and Management of Neoplastic Disease" was presented on the Medical Center campus September 26-27, with 31 physicians attending. Dr. *Stanley P. Reimann,* professor of oncology, Hahnemann Medical College presented the principal address.

Mr. *Bernard Carr* has received appointment as supervisor of admitting and outpatient offices in the University hospitals.

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Johns Hopkins University

An international symposium honoring Dr. *Elmer V. McCollum,* professor emeritus of biochemistry, was held at the University September 10-11. The symposium, sponsored jointly by the School of Hygiene and Public Health and the Robert Gould Research Foundation of Cincinnati, was attended by 150 of the world's leading research scientists. Among the speakers was Dr. *Thomas A. Moore* of Cambridge University, England, who discussed the role of Vitamin A in the health of the normal individual. Dr. *Lowell J. Reed,* vice-president of Johns Hopkins, delivered the welcoming address.

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University of Kansas

Dr. *Edward H. Hashinger,* professor of medicine and gerontology, was named on September 1 as acting dean of the School of Medicine to replace Dr. *Franklin D. Murphy,* who became chancellor of the University on that date. Dr. Hashinger has been a member of the faculty for thirty years and was a leader in developing the program of postgraduate medical education.

Utilizing the facilities of the University School of Education, the Kansas School for the Deaf, and the Hearing and Speech department of the Medical Center, a one year teacher training program for the deaf was instituted at the Medical Center on September 4. A recent survey of school children in Leavenworth, Kansas by Dr. *La Verne B. Spake* showed that almost 6 percent were hard of hearing. It is further estimated that only about one-fourth of the hard-of-hearing children in Kansas are being helped in any way. The new program will be the first in the state for the training of teachers to help these children, although for many years Kansas has had a program of education for them. At the conclusion of the course, matriculants will receive a master's degree in education.

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Stritch School of Medicine

Dr. *Louis D. Moorhead,* former dean of the School of Medicine, died on September 14 at his home. Dr. Moorhead, 58 years old, was also professor and chairman of the department of surgery.

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University of Louisville

Dr. *Alex J. Steigman,* professor of child health, has received a grant of $23,635 from the National Foundation for Infantile Paralysis for studies on experimental poliomyelitis.

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Marquette University

Dr. *Francis D. Murphy,* head of the department of medicine and medical director of Milwaukee County General Hospital, has been named director of the medical school's new infectious disease control unit at the hospital. The program will have a teaching function for the hospital staff and will offer a consultation service for doctors at County Hospital.

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College of Medical Evangelists

Eight students returned to school this fall after taking part in a field course in public health problems in southern Mexico. The group was led by Dr. *Bruce Halstead* and Mr. *Milton Murray.*

Enrollment on the Loma Linda campus for the beginning of the school year totals 190, of whom 97 are freshmen, 93 sophomores.

Dr. *Fred Norwood,* who is now on leave of absence with the AMA's Council on Medical Education and Hospitals, will return to the College in June 1952 to become vice-president in charge of public relations.

Completion of the single story Alumni Research building is expected by December 1. Value of the building will approximate $20,000.

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University of Maryland

The entering freshman class has been increased from last year's 100 to 104. Four research grants have been awarded from the Frank C. Bressler Reserve Fund. These include $3,000 to Dr. *E. G. Schmidt,* professor of biochemistry, to study putriscine and related amines in the metabolism of micro-organisms; $2,900 to Dr. *William R. Amberson,* professor of physiology, to study decompression stress and renal function; and $4,000 to Dr. *Frank W. Hachtel,* professor of bacteriology, to study the modes of action of Chloromycetin. Dr. *Frank H. J. Figge,* professor of anatomy, will receive $4,025 to study the lethal effects of x-radiation.

The new $2,800,000 Psychiatric Unit of the University Hospital is nearing completion and will be ready for occupancy about June 1, 1952.

A USPHS grant from the National Cancer Institute for $10,763 has been renewed for support of research being conducted by Dr. *V. V. Brunst,* associate in anatomy.

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University of Mexico

The 400th anniversary of the founding of the National Independent University of Mexico was celebrated recently by the holding of a Scientific Congress in Mexico City, from September 24 to 30. In connection with the sessions of the Division of the Biological Sciences and Medicine, meetings were held at the Cardiology Institute, the Children's Hospital, the Hospital for Diseases of Nutrition, the General Hospital, and the Institute for Tropical Diseases. Over 600 reports in the medical sciences

were presented, with Dr. *Ignacio Gonzales Guzman* acting as director. Guests from the United States included Dr. *K. F. Meyer,* director of the Hooper Foundation for Medical Research, University of California; Dr. *Henry Helmholtz,* professor of pediatrics, Mayo Clinic, Rochester, Minnesota; Dr. *E. S. Guzman Barron,* professor of biochemistry, University of Chicago; Dr. *Lewis N. Katz,* director of cardiovascular research, Michael Reese Hospital, Chicago; and Dr. *Chauncey D. Leake,* vice-president, University of Texas Medical Branch, Galveston.

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Mayo Foundation

Dr. *Rolf Luft,* associate professor of endocrinology at the Karolinska Institute, Stockholm, delivered a lecture, September 7, on "A Comparison of the Metabolic Effects of ACTH, Cortisone and DCA."

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University of Michigan

Dr. *James L. Wilson,* professor and chairman of the department of pediatrics and communicable diseases, spoke at the recent 2nd International Poliomyelitis Conference on the necessity for quick and accurate diagnosis in cases of poliomyelitis.

Grants totaling $76,431 have been awarded by the Horace H. Rackham School of Graduate Studies from its Faculty Research Fund and Board of Governors appropriations. These include a study of heart performance during various surgical operations under the supervision of Dr. *Warren K. Wilner Jr.,* assistant professor of anesthesiology. Dr. *Henry K. Schoch,* instructor in internal medicine, will investigate factors responsible for regulation of salt and water in normal individuals.

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University of Minnesota

Dr. *John J. Bittner,* director of the division of cancer biology, received the first Comfort Crookshank Award for Cancer Research. The award, consisting of a medal and 230 English pounds, was made to Dr. Bittner by Sir *Harold Boldero,* dean of the Middlesex Medical School, sponsors of the award.

A continuation course will be given November 26 through December 1, on child psychiatry for general physicians and pediatricians. Dr. *Reginald S. Lourie,* director of the department of psychiatry, Children's Hospital, Washington, D. C., and Dr. *J. Franklin Robinson,* director of the Children's Service Center of Wyoming Valley, Wilkes-Barre, Pennyslvania, will be visiting faculty members. Medical seminars for practicing physicians are being conducted this year in ten cities throughout the state.

Contracts totaling $9,678,770 have been awarded for construction of the proposed Mayo Memorial Center on the University campus. Funds for the 14 story building came from appropriations of the state legislature, by grants from the National Cancer and Heart Institutes, and by private gifts. Hill-Burton Act funds account for $2,000,000 of the total.

Fifteen distinguished alumni of the medical school were presented Outstanding Achievement Award medals at a dinner in their honor on October 8. Dr. *George N. Aagaard,* director of continuation medical education, presided. Speakers included Dr. *Harold S. Diehl,* dean, and Dr. *Elexious T. Bell,* emeritus professor of pathology.

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University of Missouri

Dr. *Trawick H. Stubbs,* who recently resigned as dean of the Medical School, has been named director of the health institute of the United Automobile Workers, CIO. Dr. Stubbs will also serve as medical consultant for other activities of the union's social security department.

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New York Medical College

Dr. *J. A. Werner Hetrick,* dean of the Medical College and president of Flower-Fifth Avenue Hospital, was honored on September 22 by a testimonial dinner which marked his completion of 25 years of service to the school. In the 10 years Dr. Hetrick has been dean, the medical college faculty has increased from 353 to 950.

Dr. *Jack Ruthberg,* associate in medicine, has been recently appointed assistant director of Mt. Sinai Hospital.

New York University-Bellevue Medical Center

Freshman enrollment for the College of Medicine was 140 this fall, an increase of 12 percent over last year's enrollment of 125. Tuition has been increased to $800 from last year's $750, but Dean *Currier McEwen* pointed out that students still pay less than 25 percent of the cost of their medical training.

Dr. *Edward L. Pratt* will supervise a $15,000 grant from the Playtex Park Research Institute for a study of dietary management in acute diseases in infants. Dr. *William N. Hubbard Jr.* has received appointment as assistant dean of the College of Medicine, effective October 1.

Dr. *E. Lawrence Hecht,* assistant professor of clinical obstetrics and gynecology, spoke at the National Italian Congress of Obstetrics and Gynecology in Naples on October 12.

Dr. *Charles A. Poindexter,* professor of medicine at the Post-Graduate Medical School, has been elected president of the New York Heart Association to succeed Dr. *Irving S. Wright,* president-elect of the American Heart Association.

A grant of $73,500 from the Commonwealth Fund has made possible a new demonstration program in the Institute of Physical Medicine and Rehabilitation, to be headed by Dr. *Morris Grayson,* a member of the psychiatric faculty. The new program will integrate psychiatric treatment with established rehabilitation techniques in care of the disabled.

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State University of New York

Charles Garside, president of the Associated Hospital Service of New York, has been appointed acting president of the State University to succeed Dr. *Alvin C. Eurich* who left to join the Ford Fund for the Advancement of Education. Mr. Garside has been an active member of the board of trustees and chairman of the board's committee on medical education centers.

The Research Foundation of the State University, chartered as a private, nonprofit, education corporation to aid in the administration and securing of research grants, has completed preliminary organization. As of July 31 the Foundation was administering 28 grants whose total anticipated receipts for the coming year were in excess of $250,000. An additional $100,000 was transferred to the fund in September. Most of the present grants are concerned with medical research, with such funds having been made available from 16 different grantors.

The College of Medicine at New York City began its second full term under affiliation with the State University on September 17. A freshman class of 150 was enrolled. Total enrollment stood at 540.

Dr. *R. A. Bendove,* professor of clinical medicine at the College of Medicine in New York City, died September 21 at his home on Long Island. He was 54 years old.

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Northwestern University

The University will receive approximately $1,000,000 from the estate of Dr. *Herman L. Kretschmer,* famous urologist who died on September 23. Dr. Kretschmer's will specified that the money be used to establish the "Lucy and Edwin Kretschmer Fund of Northwestern University Medical School" for "special studies and investigations in the field of urology." Dr. *Arthur R. Colwell* has been elected president of the American Diabetes Association.

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University of Pennsylvania

The annual dinner held in conjunction with the Institute of the Graduate School of Medicine on September 27, was held as a testimonial for Dr. *Robin C. Buerki,* resigning vice-president in charge of medical affairs. Dr. Buerki retired to accept a post as executive director of the Henry Ford Hospital in Detroit. Dr. *I. S. Ravdin,* John Rhea Barton professor of surgery, has been appointed as his temporary successor.

The medical school began its fall session this year three weeks earlier than the formal opening of the University's undergraduate schools. An expansion of the medical curriculum from a total of 136 weeks to a total of 151 weeks was caused, in part, by the increased amount of military medicine it is now thought imperative to teach.

There are 135 students in the new freshman class.

A number of foreign trained physicians joined the faculty of the Graduate School of Medicine with the beginning of the fall sesson. These included Dr. *Marjan Kostowiecki,* appointed assistant professor of anatomy, who formerly taught at the Polish School of Medicine in exile at Edinburgh, Scotland. Dr. *Francisco C. Pacheco,* from Brazil, will divide his time between neurosurgery and neuroanatomy. Dr. *Ove Nisell,* associated with the Karolinska Institute, Stockholm, joined the physiology staff, and Dr. *Bernard Van Lingen,* of the University of Witwatersrand, South Africa, was elected as the Lilly Medical Research Fellow for South Africa and has chosen to spend this coming year in the physiology department of the Graduate School.

Dr. *Aims C. McGuinness* has been appointed professor of urology and acting chairman of the department, to succeed Dr. *Joseph C. Birdsall,* who died in June.

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University of the Philippines

Dr. *Vidal A. Tan* is the new president of the University. He succeeded Dr. *Bienvenido M. Gonzalez,* who retired in April.

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University of Rochester

Eight candidates have been chosen for the Atomic Energy Commission fellowships in industrial medicine for the year 1951-52. The greater part of the teaching will be done by Dr. *James Sterner,* medical director of Eastman Kodak Company, and his associates. Related background subjects are taught by the department of radiation biology.

Recent promotions:

To professor: Dr. *Louis H. Hempelmann,* experimental radiology. To associate professor: Dr. *Thomas R. Noonan,* radiation biology; Dr. *Richard C. A. Jaenike,* psychiatry; Dr. *Howard B. Slavin,* bacteriology; Dr. *Hrolfe R. Ziegler,* surgery and surgical anatomy; Dr. *James H. Sterner,* industrial medicine. To assistant professor: Dr. *Irwin H. Slater,* pharmacology; Dr. *Myrtle E. Logan,* psychiatry and pediatrics; Dr. *Murray D. Lewis,* psychiatry and pediatrics; Mr. *Natt C. Jacobs,* medical illustration.

Rutgers University

An advisory committee engaged by the state of New Jersey has expressed a preference for the New Brunswick campus as a site for the proposed medical school. The committee was composed of Dr. *Jean A. Curran,* dean of the New York State University College of Medicine at New York; Dr. *Vernon W. Lippard,* dean of the Department of Medicine, University of Virginia; and Dr. *Lloyd E. Blauch,* associate chief for education in the Federal Security Agency. The legislative appropriations committee had tentatively been in favor of Newark as site for the new school.

Royalties from streptomycin are financing the new Rutgers Institute of Microbiology now being built. The new unit will cost an estimated $1,790,000. Dr. *Selman A. Waksman,* director of the new institute and co-discoverer of streptomycin, has transferred to the new unit half of his remaining royalty rights from sale of the antibiotics which he and his colleagues developed. Dr. Waksman's share in the royalties is now 5%. Five percent, or approximately $40,000 has been allocated to the new foundation, 82½% goes to the Rutgers Research and Endowment Foundation, and 7½% is divided among fourteen other scientists, former students of Dr. Waksman, who participated in the discovery and development of streptomycin.

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Saint Louis University

Dr. *Grayson Carroll,* associate professor of urology, has been awarded the 1951 Distinguished Service Award of the Mississippi Valley Medical Society.

Dr. *Peter G. Danis,* chairman of the pediatrics department, delivered the first lecture in the second annual Institute on Child Development offered by the Saint Louis University Adult Education Center.

A two day Open House, October 6 and 7, highlighted the 50th anniversary celebration of the founding of Mount St. Rose Sanatorium. Mount St. Rose was the first institution of its kind established in the Middle West for the exclusive care of patients ill with tuberculosis.

Medical College of South Carolina

Dr. *Jorgen Weis-Fogh,* formerly a Rockefeller Fellow at the Medical College and at Western Reserve University, has accepted appointment as assistant professor of anatomy.

A grant of $7,789 from USPHS has been awarded to Dr. *Ben H. Boltjes,* head of the department of bacteriology, to continue his studies on the control of whooping cough. The department of neuropsychiatry has been granted $6,500 by USPHS for educational instruction because of the excellence of the work in the department during the past two years. Experimental work on the pathologic physiology of burns will be financed by a grant of $30,000 from the Department of the Navy to the department of anatomy. Another grant, $5,940, to the anatomy department has been awarded by the Trudeau Foundation of New York City. Two additional grants have been received from the Public Health Service. These include the fourth consecutive $25,000 gift to the Cancer Clinic, and $5,055 from the National Institutes of Health for an investigation of respiratory control under the direction of Dr. *Theodore Bernthal,* head of the department of physiology.

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University of South Dakota

Research projects carried on by 21 staff members of the School of Medicine were the subjects of 25 different articles published in medical and other scientific journals during the past year. Dean *Donald Slaughter* was the author of five of the articles and co-author of six.

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Stanford University

The 31st course of Lane Medical Lectures was delivered at the School of Medicine from October 2 through 12 by Dr. *Kaj Ulrik Linderstrom-Lang,* director of the Carlsberg Laboratory, Copenhagen.

The annual postgraduate conference in clinical ophthalmology, devoted this year to ophthalmic surgery, will be given from March 24 to 28, 1952. Registration will be limited to thirty physicians who limit their practice to diseases of the eye, ear, nose and throat. Further information may be obtained from the Office of the Dean.

Dr. *Anthony J. J. Rourke,* physician-superintendent of Stanford University Hospitals, was inducted as president of the American Hospital Association at their 53rd annual convention in St. Louis. He succeeds Dr. *Charles F. Wilinsky,* director of Beth Israel Hospital, Boston.

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Temple University

The School of Medicine celebrated its Golden Jubilee on October 11, 12, 13. Dr. *George W. Thorne,* professor of medicine, Harvard Medical School, was the principal speaker at the convocation on October 12.

Dr. *Lawrence Abel,* British surgeon, was guest speaker at the Medical School on September 19. Dr. Abel discussed the British health system.

Ten women were included in the 136 entering students of the freshman class at the Medical School. The freshmen came from 17 states, India, Guatemala and Puerto Rico.

Recent grants include $12,680 from USPHS for undergraduate training in psychiatry, a National Heart Institute award of $4,499 to Dr. *J. Richard R. Bobb,* and a G. D. Searle & Company grant of $3,600 to establish a fellowship in gastroenterology.

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University of Tennessee

Dr. *Alan T. Waterman,* director of the National Science Foundation, was the principal speaker at the dedication of the Cancer and Pathology Research Laboratories, first units to be completed in the expansion program of the College of Medicine. Dr. Waterman praised the progress of the state of Tennessee in scientific research, and made a strong plea for restoration of the proposed budget of the National Science Foundation, which had recently been reduced to $300,000 by the action of the Federal House of Representatives. Other speakers at the ceremony included Dr. *Robert A. Moore,* dean of Washington University School of Medicine, Dr. *Leonard A. Scheele,* surgeon general, United States Public Health Service, Dr. *Henry K. Beecher,* professor of research in anesthesia at Harvard Medical School, and Dr. *Edward A. Doisy,* director of the biochemistry de-

partment of Saint Louis University School of Medicine.

Fifty freshman students were admitted to the College of Medicine with the start of the fall quarter. By the end of the year, 200 freshman students will have been admitted, as opposed to previous enrollments of 140. This increase in enrollment is an effort to overcome the shortage of physicians for rural areas in the state. Also designed to reduce this shortage is the Family General Practice Clinic for senior students, which acquaints them with the problems of general practitioners in nonurban areas.

Dr. *Nils Lofgren,* on a year's leave of absence from the University of Stockholm, has been appointed instructor in chemistry for the period. Dr. *Frederick C. Chang,* former chairman of the department of chemistry of Lingnam University, Canton, has joined the staff as a lecturer in chemistry and research associate in pathology. Dr. *Arne V. Hunninen,* formerly of Mount Union College, Alliance, Ohio, has been appointed assistant professor of preventive medicine.

Dr. *Roland H. Alden,* head of the department of microscopic anatomy, has been appointed chief of the division of anatomy to succeed Dr. *Frank Harrison.* Dr. Harrison will continue until the end of the current quarter, at which time he will assume duties as professor of neuro-anatomy at Southwestern Medical School in Dallas, Texas. Dr. *Raymond Laird,* associate professor of preventive medicine, has resigned to become chief consultant on malaria control in Burma for the Economic Cooperation Administration. Dr. Laird left for Rangoon on September 30.

Atomic Energy Commission grants of $30,406 have been awarded to five research projects at the College of Medicine, one of them new. The new project will be directed by Dr. *John L. Wood,* professor of chemistry.

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University of Texas—Medical Branch

Dr. *A. E. Walker,* neurosurgeon at Johns Hopkins Hospital, delivered the James Greenwood Lecture in Neurosurgery on October 3. His subject was "Surgery of Involuntary Movement."

Dr. *Harvey Slocum,* professor of anesthesiology, was guest lecturer during August at the University of Nuevo Leon Medical School, Monterrey, Mexico, as part of the exchange program arranged with Nuevo Leon and the Medical Branch.

Dr. *Robert L. Hargrave* has been appointed assistant professor of pathology and coordinator of the cancer clinic and teaching program. Dr. *Roger Lienke* has been appointed assistant professor of pediatrics. Dr. *Salvador Infante,* professor of surgery at the Medical School of the University of San Salvador, has been appointed to a fellowship in the department of pathology. Dr. *Charles D. Dukes* has been placed in charge of the Laboratory for Surgical Bacteriology.

Drs. *Victor C. Calma* and *Edward G. Rennels* have accepted appointments as assistant professors of physiology and anatomy, respectively.

Dr. *Kenneth Franklin,* professor of physiology, University of London, will be guest lecturer in physiology at the Medical Branch during the week of November 12. Following his stay at Galveston, Dr. Franklin will visit Baylor Medical College and Southwestern Medical School.

The Section on Medical Education and Hospital Training of the Southern Medical Association will offer a special symposium on "Professional Training for General Practice" in Dallas on November 7, in connection with the Association's annual meeting. Participants will include Dr. *W. T. Sanger,* president of the Medical College of Virginia, Dean *D. S. Pankratz,* of the University of Mississippi School of Medicine, and the executive officers of the medical schools of Texas.

The A. L. Harris Company of Dallas, through the Southwestern Medical Foundation, has awarded a prize of $1,000 to Dr. *Charles M. Pomerat,* professor of cytology, for his contributions to the scientific knowledge of cell growth.

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Vanderbilt University

The lectures in the 1951 Abraham Flexner Lectureship are being delivered this year by Dr. *Hans Ludwig Kottmeier,* chief of the radiological section of Radium-

hemmer, Stockholm. Dr. Kottmeier's lectures include "The Program of the Cancer Campaign in Sweden," "Classification of Gynecological Cancer," and "Surgery versus Radiotherapy in Gynecological Cancer."

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University of Virginia

"Obstetrics and Gynecology in General Practice" was the title of the first conference for general practitioners held by the Department of Medicine this year, on October 19-20. Other conferences in the series will be "The Management of Common Traumatic Injuries," January 11, 1952; and "Infectious Diseases," April 4, 1952.

Dr. *Walter O. Klingman* has been promoted to professor of neurology and psychiatry. Promoted to assistant professor were: Dr. *Kenneth R. Crispell,* internal medicine; Dr. *Hans Hoch,* biochemistry; Dr. *Preston B. Lowrance,* internal medicine; and Dr. *Robert A. Kelley,* urology.

Dr. *J. Hamilton Allan,* chairman of the school of orthopedics, has returned from a four week tour of the Far East Command, where he served as consultant to the Surgeon General, U. S. Army.

A research grant has been awarded to the school of pathology by the Army. The research in the histochemical study of repair will be under the supervision of Dr. *J. F. A. McManus.*

Dr. *George McLean Lawson,* for twelve years professor of preventive medicine and public health, died on September 20 at the age of 53.

Commemorating the 100th Anniversary of the birth of Walter Reed, 1869 graduate of the Department of Medicine, Dr. *William B. Bean,* professor of internal medicine, University of Iowa, spoke October 5 on "Walter Reed, the Study of a Disciplined Mind". Dr. Bean's talk was the first in the current series of Friday Evening Medical Lectures, which will continue throughout the fall session.

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Medical College of Virginia

Gifts and grants to the Medical College for the fiscal year 1950-51 totaled $505,649.91. This amount included $177,301 from the United States Army, $44,685 from the United States Navy, $154,587 from USPHS, $30,000 from the American Tobacco Company for a two year period, and $15,000 from the Commonwealth Fund.

Dr. *William T. Sanger,* president of the College, was named president-elect of the National Society for Crippled Children and Adults at the recent annual convention in Chicago.

Dr. *John M. Meredith* has been appointed professor and head of the department of neurological surgery to succeed Dr. *Claude C. Coleman,* who resigned in June.

Recent promotions: To associate professor: Dr. *Leslie E. Edwards,* physiology; Dr. *Henry G. Kupfer,* clinical pathology. To assistant professor: Dr. *Robert K. Waller,* legal medicine. Recent appointments to the staff: To assistant professor: Dr. *James G. Young,* pharmaceutical chemistry; *Jackson J. Taylor,* physics; *Ann Carolyn Smith,* surgical nursing.

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University of Washington

A reevaluation study of the grading system employed in the School of Medicine has been made by a committee whose chairman was Dr. *Clement Finch.* Recognizing that student needs for grades are chiefly to know whether or not work is satisfactory, and that competitive grading information for comparison between students themselves is undesirable, the committee recommended an alteration in the grading system. This was the basis of action subsequently taken by the Executive Committee. Henceforth, only the grades of *P, D, Cond.,* or *E* will be submitted to the University Registrar. Students will not know the quantitative grades on file with the Dean's office. The latter grades are felt to be valuable for faculty use in placement of students in internships. The *P* grade means an *A, B,* or *C,* while the *Cond.* means a grade lower than a low pass, but one possible to rectify to a *D* by additional work. The mark of *E* is a final failure, impossible to make up by re-examination. The submitted evaluation to the Dean's office will consist, whenever possible, of both a letter grade and a written characterization of each student.

Dr. *George G. Sutherland* has accepted

appointment as clinical associate professor of psychiatry. Dr. *Frank M. Huennekens* is a new assistant professor in the department of biochemistry.

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Washington University

Dr. *Frederick G. Germuth Jr.*, former chief of the department of immunology, National Institutes of Health, has accepted appointment as assistant professor of pathology.

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Wayne University

Dr. *James E. Loftstrom* has been appointed special professor of radiology and chairman of the division in the College of Medicine. Dr. Loftstrom was also made head radiologist of the Receiving Hospital.

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University of Western Ontario

A bequest of $100,000, left by the will of the late *John Bayne MacLean*, has been used to establish the Michael Francis Fallon Memorial Chair of Clinical Preventive Medicine. Dr. *George Edgar Hobbs*, assistant dean of the Faculty of Medicine, has been named to occupy the chair.

Dr. *O. W. Anderson*, associate professor in charge of social aspects of medicine, spent the summer on a World Health Organization travel fellowship, touring Great Britain and the Scandinavian countries. Dr. *Carol W. Buck*, 1951 Rockefeller fellow, has been awarded the Chadwick and Newsholme Prizes at the London School of Tropical Medicine and Hygiene.

Dr. *James A. F. Stevenson*, formerly of Yale University, has been appointed professor and head of the department of physiology, to succeed Dr. *R. L. Noble*. Dr. Noble continues as professor of medical research and has been appointed associate head of that department. Drs. *C. R. Engel* and *K. K. Carroll* have been named assistant professors of medical research. Dr. *E. R. Plunkett*, endocrinologist, is studying obstetrics in Edinburgh.

A radioactive isotope laboratory has been established in the department of biochemistry by a grant from the Ontario Cancer Foundation.

Dr. *C. A. Thompson* has been named assistant professor in ophthalmology and otolaryngology. Dr. *R. E. Greenway* has been appointed G. A. Routledge fellow in otolaryngology. Dr. *W. C. Sharpe* has recently been promoted to assistant professor of medicine.

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Western Reserve University

Dr. *Carl J. Wiggers*, professor of physiology, commenting on a new guide for physicians which was prepared for the American Heart Association under his supervision, stressed the need for accurate blood pressure readings. Dr. Wiggers decried the practice of having blood pressure reading booths at county fairs and carnivals, stating that "measurement of blood pressure is not a mechanical affair," but depends "on the technique, skill, and knowledge of the operator."

Recent appointments to the staff: To professor: Lt. Col. *Frank W. Govern*, military science and tactics. To associate professor: Dr. *Harold Ginsberg*, preventive medicine. To assistant professor: Dr. *Keith C. Keeler*, physical medicine and rehabilitation; Dr. *John U. Uzmann*, anesthesia.

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University of Wisconsin

An annual appropriation of $15,000 by the Wisconsin Association for the Disabled has made possible the establishment of an Easter Seal Cerebral Palsy Center at Wisconsin General Hospital. Dr. *Mabel S. Masten* will head the faculty committee which will administer the center.

Recent appointments to the staff:

To associate professor: Dr. *William P. Young*, surgery; Dr. *John K. Curtis*, medicine. To assistant professor: Dr. *Bruce J. Longley*, surgery; Dr. *Frank C. Larson*, medicine; Dr. *Chalmer Davee*, clinical medicine.

The Wisconsin Heart Association has made grants to four research projects at the Medical School. These include $4,000 to the department of medicine to study the effects of various drugs on cerebral blood flow and metabolism in patients with severe fixed diastolic hypertension, and $2,500 to study the effect of total and subtotal adrenalectomy in experimentally induced

hypertension. The department of pharmacology will receive $2,100 to study the effect of local anesthetics on the heart, and $1,230 for research on a correlation of responses of the cardiovascular system with different methods of anesthetic administration.

Dr. *J. Holden Robbins,* assistant professor of anatomy, died August 11 at his home. Dr. Robbins was 53 years old.

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Woman's Medical College

Dr. *Burgess Lee Gordon,* new president of the college, gave the leading address for the opening of the 102nd session on September 12. His subject was "The Privileges of Medicine." Dr. *Jacob H. Vastine 2nd,* professor of radiology, was given a citation for completion of 25 years of teaching service. Fifty freshman students were admitted for this session, bringing total enrollment to 188.

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Yale University

Dr. *John F. Fulton,* Sterling professor of the history of medicine, departed August 30 for Europe where he will serve during the fall session as exchange professor of physiology at Belgium's University of Louvain. He will also deliver the Sherrington lecture at the University of Liverpool, England. Dr. Fulton's residence at the University of Louvain will be sponsored by the Belgian Francqui Foundation.

Dr. *Robert Jay Cook,* associate orthopedist with the University's department of health and attending orthopedic surgeon at Grace-New Haven Community Hospital, died at his home on October 4. He was 63 years old.

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University of Oregon

Recently approved grants from the Oregon Division of the American Cancer Society total $22,585 for the year ending August, 1952 and represent continuation of cancer research programs now underway.

Access roads have now been completed at a cost of $35,000 to the location of the new $6,000,000 University General Hospital. Construction is scheduled to begin in early spring of 1952.

Dr. *J. Douglas Robertson,* director of clinical investigations of the London Clinic, England, was speaker at the Portland Academy of Medicine held at the Medical School, October 23 and 24.

Lasker Awards Presented

Dr. *Florence R. Sabin* of Denver, Dr. *Elise L'Esperance,* and Dr. *Catharine Macfarlane,* professor at Woman's Medical College, each of whom has practiced medicine for more than fifty years, were among the six physicians who received the 1951 Lasker Awards of the American Public Health Association at the annual meeting on October 30. Other winners of the prize, consisting of $1,000 each and leather-bound citations, were Dr. *Karl F. Meyer,* director of the University of California Hooper Foundation, Dr. *William G. Lennox,* Children's Medical Center, Boston, and Dr. *Frederick A. Gibbs,* professor of neurology, University of Illinois College of Medicine.

The Personnel Exchange

To aid solution of the problem of faculty vacancies, MEDICAL EDUCATION *will list persons and positions available, as a free service. The school, department, or person may have the option of being identified in these columns or of being assigned a key number for each position listed. Mail addressed to key numbers will be forwarded to the person or department listing the request.*

Information for these columns must reach the Journal office not later than the 10th of the month preceding publication. The deadline for the January issue will be December 10.

All mail should be addressed to: MEDICAL EDUCATION, *185 N. Wabash Avenue, Chicago 1, Illinois.*

Faculty Vacancies

Coordinator of Instruction and Research in *Cancer.* Duties: Direction of tumor clinic, coordination of and participation in instruction and research in cancer. Qualifications: M.D., either pathologist or clinician, with interest and experience in some phase of cancer research. Please address inquiries to the Dean, Department of Medicine, *University of Virginia,* Charlottesville, Virginia.

Wanted: Physician, (*pediatrician or internist*) as Medical Director for a small clinical investigative unit affiliated with a medical school. Problems concern interrelationships of ventilation difficulties and of circulation. Director must have clinical and investigative skill and be able to set up and administer own program. Address: V-1, Journal of MEDICAL EDUCATION, 185 N. Wabash Avenue, Chicago 1, Illinois.

Oto-Rhino-Laryngology Residencies are open at the new Ohio Health Center. Board approved. Two years if had internship and basic science course, otherwise three years. 1100 new beds and affiliation with 300 bed Children's Hospital, etc. Teaching clinics; excellent operative service including endoscopy, laryngectomies, radical neck, maxillo-facial, mandibular, fenestration, etc. Write: *Ohio State University, College of Medicine,* attention Chairman Otolaryngology Department; or 40 S. 3rd Street, Columbus 15, Ohio.

Personnel Available

Internist-Educator. Young, certified, experienced in teaching, editing, research and administration, prominent position, many publications, seeks opportunity for clinical investigation, editorial work and teaching. Highest references. Minimum salary, $10,000. Address: A-3, Journal of MEDICAL EDUCATION, 185 N. Wabash Avenue, Chicago 1, Illinois.

Microbiology: Man, 41, married, 1 child. A.M., Ph.D. Desires teaching, research, or departmental responsibilities, in medical school, university, city or state health laboratories. Experience in teaching bacteriology, mycology, parasitology, public health, histology and biology. Now professor and head of division of microbiology, but will accept lower rank in a *progressive* department. Sigma Xi and professional societies; publications. Excellent references. Available January or September 1952. Address: A-2, Journal of MEDICAL EDUCATION, 185 N. Wabash Avenue, Chicago 1, Illinois.

Fellowships for Study Abroad

The World Health Organization is offering 10 to 14 fellowships, available in 1952, for foreign study in the field of health. The Fellowship Selection Board, established by Surgeon General Leonard Scheele, consists of Dr. Joseph W. Mountin, U. S. Public Health Service; Dr. Leona Baumgartner, American Public Health Association; and Dr. Walter A. Bloedorn, Association of American Medical Colleges.

Applications will be considered in various branches of public health or such allied fields as medical or nursing education.

Applicants must be engaged in full-time public health or educational work. Knowledge of the language of the country to be visited is necessary. Nonfederal workers will be given preference. In making selections, the Board will consider the ability of the individual and the importance of the contribution which his foreign study will make to his community on his return. To date, grants have not been given for research activities alone.

All grants given in the past have been for two or three month periods. The World Health Organization provides transportation across the ocean and in the country visited, with a stipend from $160-$300 a month. Application blanks may be obtained from the Division of International Health, U. S. Public Health Service, Washington, D. C. Applications must be filed in triplicate by January 1, 1952.

Audiovisual News

Important New Basic Teaching Films in Orthopedics and Surgical Anatomy

A series of nine motion pictures on "Surgical Approaches to the Joints" will shortly be available through the Department of Medicine and Surgery of the Veterans Administration. The pattern of the series was conceived by Dr. *Paul B. Magnuson,* former medical director of the Veterans Administration. Medical advice and supervision were supplied by Dr. *LeRoy C. Abbott* and Dr. *J. B. de C. M. Saunders* of the University of California Medical School. Production was carried through by Mr. *Robert Churchill* and Mr. *Sy Wexler* of Churchill-Wexler Film Productions. Each of these 16mm films runs for approximately 30 minutes and is in color, with sound. They have been designed for fundamental exposition of the surgical anatomy of the joints and the surgical approaches to them. The film titles are:

1. Surgical Approaches to the Scapulohumeral Joint
2. Surgical Approaches to the Elbow Joint
3. Surgical Approaches to the Hip Joint
4. Surgical Approaches to the Knee Joint
5. Surgical Approaches to Bones of the Wrist
6. Surgical Approaches to the Bones of the Foot
7. Surgical Approaches to the Ankle Joint
8. Surgical Approaches to the Sternoclavicular and Acromioclavicular Joints
9. Surgical Approaches to the Spine and Sacro-iliac

This thumbnail abstract describes the series: "Animated diagrams depict the bones, ligaments, muscles, tendons, and neurovascular structures with which the surgeon must deal in various approaches to each of the joints. Actual surgical operations utilizing approaches to the joints are shown, with emphasis always on the anatomy of the region. Each operation is recapitulated in animated diagrams for greater clarity."

The first two films of the series, "Surgical Approaches to the Scapulohumeral Joint" and "Surgical Approaches to the Elbow Joint," were awarded first prizes for cinematographic excellence in the medical section of the Venice International Exhibit of Cinematographic Arts in 1949 and 1950, respectively. The entire group is of similarly high film quality.

Possibly never before has a series of medical motion pictures been so well developed for a specific instructional purpose. In general, content, presentation and teaching effectiveness of the films will probably be found satisfactory. Their simple design and judiciously selected subject matter make them suitable for application in medical college courses in introductory orthopedics and surgical anatomy. They are likely to be of sufficient value for medical student teaching to warrant purchase of the entire series or selected units from it. Their availability in the film library will permit supervised study by groups of students outside the classroom. In the intern and residency training programs the films may well become standard assigned screenings, to be presented to the group by the appropriate surgical staff member. Orthopedic residents may obtain the greatest benefit from repeated viewings. General surgeons will discover simple and direct orthopedic principles. Accomplished orthopedists can gain from review of the films.

The series is uniquely applicable to experimental investigations which may determine the teaching effectiveness of the films with the different audiences indicated.

These films can be procured from the V. A. Central Office Film Library, U. S. Department of Agriculture, Motion Picture Service, Washington 25, D. C. (loan); American Academy of Orthopedic Surgeons, 122 South Michigan Avenue, Chicago, Illinois (loan); United World Films, Inc., 1445 Park Avenue, New York 29, N. Y. (sale). The first four films of the series are available at this time. The last five titles will not be available until April 1, 1952.

Detailed evaluative reviews by the Medical Film Institute are in preparation for later publication.

D. S. R.

The Latest in Color Television

Since the publication of the article on television in the Journal of MEDICAL EDUCATION, July 1951 (pgs. 245-259), several important new color television developments have taken place.

1. The new RCA color system is now being demonstrated. This system has been developed around the new RCA tri-color tube. The tube is designed to show images in color without the use of rotating filters, as in the competing CBS system. Whereas the CBS system is a field sequential system and not compatible with the present black and white television transmission standards, the RCA tri-color tube operates on a dot sequential principle and it is possible to view an RCA color program in black-and-white on any home receiver.

There is no limitation to the size of the image in the RCA tube, because the tubes can eventually be built in any size. However, even with the CBS system, there are several mechanical ways in which large tubes can be made to receive color. At present, the RCA tubes give images significantly smaller than their diameter specifications would indicate. This is because there is a masking down of the tube to the image area. The tube is round and the masked image is round, causing some cut-off in the corners of the picture. The tube is apparently expensive to manufacture and contains many elements, which means that it will be an expensive item in the price of a new set as well as an expensive replacement part when a new tube is required. The rotating mechanism in the CBS system is also an expensive item, and one which will require occasional servicing.

The RCA color images are very good and are comparable to the CBS images, it being a matter of personal taste as to which is better. There is a slightly different color quality between the two systems, but both are satisfactory for many uses, including those of medicine.

Close-up scenes, especially those showing detail, televise beautifully in color. This is true of both systems, as it is with monochrome TV. In color, long distance scenes tend to encompass many small areas of color and the result is a fused color patchiness in motion because the "resolving" power of TV does not define the small areas too well.

2. The other important event in color television is the announcement that a new color television tube has been developed by Ernest O. Lawrence, of the University of California, famous nuclear physicist and Nobel prize winner. This tube is being manufactured by Chromatic Television Inc., a subsidiary of Paramount Pictures Corp. It is a new type of tube, very simple in design and manufacture, and less expensive to manufacture than the RCA tri-color tube or the whirling disc or drum systems of CBS. This new tube can be adapted at no great cost to receive both CBS (mechanical) and RCA (electronic) color programs. For CBS color reception, in addition to the Lawrence Color Tube, an adapter and three electronic tubes would be needed to change the scanning rates of the pictures from 60 to 144 a second. This new television tube will allow for manufacture of inexpensive color TV sets. It is claimed by the manufacturers that the tube will receive both color and black-and-white and that the color is as good as that of the RCA tri-color tube, no better, but cheaper.

3. Another significant color TV happening is the appearance on the market of the new CBS-Columbia color television sets for the family market. These are at present of the 12½ inch round tube whirling disc type which has been used in the Smith, Kline and French color TV demonstrations at medical conventions. The larger 17 and 20 inch rectangular tube sets with the revolving drum principle should also be on the market soon.

4. There are several systems by which large screen theater-type TV is made possible by projection. The Schmidt optical system has been in use for some time and is being employed by several manufacturers. However, there is another method which has been developed in Switzerland. It is referred to as the Eidophor process and uses an entirely different approach in projection. Twentieth Century-Fox has purchased the U. S. rights. The system has been "perfected" now for projection of color TV. The first U. S. demonstrations will probably be made to the company's stockholders at their annual meeting.

V. F. B.

Audiovisual Laboratory Formed

Dean *Joseph T. Wearn*, of the School of Medicine of Western Reserve University, has announced the formation of a new audiovisual-television laboratory. *Bernard V. Dryer*, consultant of the Medical Film Institute of the Association of American Medical Colleges, has joined the staff as research director of the laboratory, working directly with Dr. *John L. Caughey, Jr.*, Associate Dean. Mr. Dryer will collaborate with Dr. *Walter H. Pritchard*, chairman of the Post-Graduate Committee on Education, in an investigation of the uses of audiovisual methods for the physician in practice. Mr. Dryer will also assist Dr. *Thomas Hale Ham*, chairman of the Committee on Medical Education, in the program of undergraduate medical school curriculum experimentation which has been approved by the Commonwealth Fund.

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AMA Film Catalog Available

A revised catalog of motion pictures procurable through the Committee on Medical Motion Pictures of the American Medical Association is now available. This catalog lists 62 films, most of which are at the professional level. Approximately 30 of these films are especially suitable for use in medical schools. Eight new films have been added to the library.

Copies of this list are available upon request from:

Committee on Medical Motion Pictures
American Medical Association
535 North Dearborn Street
Chicago 10, Illinois.

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Notice of New Film Releases

These notices of new releases are not reviews, but merely indicate, in advance of appraisals, new films of probable value to medical teachers.

Scoliosis. Method of Correction and Fusion

DATA: 16mm, color, sound, 1000 ft., 30 minutes. **Sponsor:** Hospital for Special Surgery, New York, N. Y. **Author:** John R. Cobb, M.D. **Producer & Distributor:** Sturgis-Grant Productions, Inc., 314 East 46th, New York, N. Y. **Intended Audience:** Orthopedists, general practitioners.

This film shows a fixed routine to be followed in those cases of scoliosis which require correction by spinal arthrodesis, and includes analysis of roentgenograms during treatment.

Glaucoma. What the General Practitioner Should Know

DATA: 16mm, color, sound, 825 ft., 23 minutes. **Sponsor:** National Society for the Prevention of Blindness. **Producer:** Sturgis-Grant Productions, Inc., New York, N. Y. **Scientific Adviser:** National Society's Committee on Glaucoma. **Distributor:** National Society for the Prevention of Blindness, 1790 Broadway, New York, N. Y. **Intended Audience:** General practitioners.

A visual presentation of the mechanism of glaucoma, its early signs and symptoms, the rationale of treatment.

Functional Anatomy of the Hand

DATA: 16mm, color, sound, 1130 ft. 50 min. **Sponsor:** National Foundation for Infantile Paralysis. **Producer:** Dr. Joe E. Markee, Duke University School of Medicine. **Distributor:** National Foundation for Infantile Paralysis, 120 Broadway, New York, N. Y. **Intended Audience:** Medical students, physical therapists, occupational therapists, physicians.

The normal anatomy and function of the muscles of the forearm and hand, demonstrated by means of special anatomic preparations.

A Concept of Maternal and Neonatal Care

DATA: 16mm, black and white, sound, 950 ft., 26 min. **Sponsor:** The George Washington University School of Medicine. **Producer:** Medical Film Institute of the Association of American Medical Colleges. **Distributor:** Medical Film Institute Services, 13 E. 37th St., New York, N. Y. **Scientific Advisers:** John Parks, M.D., and Preston A. McLendon, M.D. **Intended Audience:** Obstetricians, pediatricians, general practitioners, nurses, hospital administrators and medical students.

This film tells the story of a woman's experiences through her first pregnancy, delivery and early post-natal period, and is in the newer setting of family-centered obstetrics and pediatrics found at the George Washington University Hospital and other medical centers.

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Summaries of Film Reviews

These brief notes on some motion pictures in atomic medicine, neoplasms of the respiratory system and psychiatry are intended to afford an offhand idea of the desirability and use of the films under review. They are drawn from the detailed evaluative reviews prepared by the Medical Film Institute and available through the Association of American Medical Colleges. Anyone contemplating a showing of these films, as well as anyone interested in the production of similar or related films, should obtain the longer reviews for study. Detailed reviews of the first three films summarized below have been published in the volume, "Reviews of Films in Atomic Medicine," available from Health Publications Institute, 216 N. Dawson Street, Raleigh, N. C., price 50¢.

Atomic Medical Cases: Japan—World War II (Code No. PMF-5143)

16mm, black-and-white, sound, 1350 ft., 37 min.

Year of Production: 1945; **Year of Release:** 1949.

Producer: U. S. Army.

Distribution: Address loan requests, with code number, to: Commanding General, Attention: Surgeon,

Headquarters, First to Sixth Army (according to location of user). Also available for purchase, for $44.69, from United World Films, Inc., 1445 Park Avenue, New York 29, N. Y.

Summary: A gripping film report, taken several weeks after the atomic bomb explosions, of the general devastation of Hiroshima and Nagasaki and the damage done to medical services, hospitals and inhabitants. The three types of atomic injury and their pathological aspects are emphasized, but the film is medically superficial and unmethodical, and not always well-produced; this does not, however, impair too much its great power as a document and value as a vehicle of orientation and motivation.

Audience: Physicians, nurses, medical auxiliaries, public health personnel, civil defense personnel, selected general adult audiences.

The Medical Effects of the Atomic Bomb
PART I: PHYSICS, PHYSICAL DESTRUCTION, CASUALTY EFFECTS
(Code No. PMF-5058)
16mm, color, sound, 1150 ft., 32 min.

Year of Production: 1949; **Country of Origin:** U. S. A.
Producer: U. S. Army.
Distribution: Address loan requests, with code number, to: Commanding General, Attention: Surgeon, Headquarters, First to Sixth Army (according to location of user). Also available for purchase, for $142.39, from United World Films, Inc., 1445 Park Avenue, New York 29, N. Y.

Summary: A crowded and ambitious film intended to provide orientation and information on atomic physics, and physical destruction and types of casualty effects of atomic bombing. It is aimed at both physician and layman but not fully satisfactory for either. Concentration on the totality of devastation in atomic disaster gives the film a tone of pessimism, which must be considered in its use.

Audience: Physicians, medical students, and related professional personnel; nurses; defense authorities.

The Medical Effects of the Atomic Bomb
PART II: PATHOLOGY AND THE CLINICAL PROBLEM
(Code No. PMF-5148)
16mm, color, sound, 1330 ft., 37 min.

Year of Production: 1949; **Country of Origin:** U. S. A.
Producer: U. S. Army.
Distribution: Address loan requests, with code number, to: Commanding General, Attention: Surgeon, Headquarters, First to Sixth Army (according to location of user). Also available for purchase, for $168.04, from United World Films, Inc., 1445 Park Avenue, New York 29, N. Y. Prior approval must be secured from Armed Forces Institute of Pathology, Medical Illustration Service, 7th Street and Independence Avenue, S.W., Washington 25, D. C.

Summary: A well-organized and accurate teaching film on the casualties resulting from mechanical, thermal and radiant energy released by an atomic blast, with a summary and basis for individual prognoses. Although some weaknesses in presentation reduce the effectiveness of the film, it is a valuable survey of the subject.

Audience: Physicians, medical students, medical auxiliary personnel.

Organic Disorders of the Larynx
16mm, color, silent, 690 ft., 29 min.

Year of Production: 1947; **Country of Origin:** U. S. A.
Sponsor: The Jacques Holinger Memorial Fund, Chicago; **Author and Producer:** Paul H. Holinger, M.D., Chicago.
Distribution: The Jacques Holinger Memorial Fund, 700 North Michigan Avenue, Chicago 11, Ill., **Sale:** $150; **Loan:** $15.

Summary: This is a valuable and representative selection of motion picture views of organic disorders of the larynx. Technically superb in its individual views, the film is not as methodically organized as it could be and contains comments on therapy which do not contribute to its intrinsic value. The film is of considerable value for the study of laryngology.

Audience: Laryngologists, postgraduate students of laryngology, physicians, residents, interns, medical students.

Tumors of the Bronchi
16mm, color, silent, 407 ft., 17 min.

Year of Production: 1945; **Country of Origin:** U. S. A.
Sponsor: The Jacques Holinger Memorial Fund, Chicago; **Authors and Producers:** Paul H. Holinger, M.D., and Ralph G. Rigby, M.D., Chicago.
Distribution: The Jacques Holinger Memorial Fund, 700 North Michigan Avenue, Chicago 11, Illinois, **Sale:** $100; **Rental:** $15.

Summary: This film contains a methodical and carefully chosen selection of motion picture views taken through the bronchoscope. Bronchial tumors and certain conditions simulating such tumors are shown, with roentgenograms of the same cases for comparison. The film is a series of cinematic illustrations rather than a self-contained teaching tool. Its excellent visual material should be most valuable for audiences who are learning the use of the bronchoscope, as well as for those using it routinely in classrooms.

Audience: Otolaryngologists, chest specialists, postgraduate students of bronchoscopy, residents, interns, medical students.

They Speak Again—The Rehabilitation of Laryngectomized Patients
16mm, color, sound, 600 ft., 16 min.

Year of Production: 1949; **Country of Origin:** U. S. A.
Sponsor: Massachusetts Eye and Ear Infirmary, American Cancer Society, and its Massachusetts Division; **Medical Supervision:** LeRoy A. Schall, M.D.; **Producer:** Sturgis-Grant Productions, Inc.; **Director:** Warren Sturgis; **Art and Animation:** Dwinell Grant.
Distribution: Sturgis-Grant Productions, Inc., 314 East 46th Street, New York 17, N. Y., **Sale:** $80; **Rental:** $7.50; American Cancer Society, 47 Beaver Street, New York 4, N. Y., **Loan.**

Summary: This powerful film is an evocative, semi-technical report on the training of laryngectomized patients in the use of esophageal voice, as practiced at one hospital. The film ranges from the psychological preparation of the patient prior to the operation to the attainment of social and occupational adequacy as a result of vocal rehabilitation.

Audience: General practitioners, medical students (third and fourth years), student nurses, public health and social workers concerned with rehabilitation, voice teachers and therapists; also

applicable as a morale builder for laryngectomized patients.

Psychosomatic Disorders
(Navy Code No. MN-3428f)
16mm (taken on 35mm), black-and-white, sound, 800 ft., 22 min.
Year of Production: 1945; **Country of Origin:** U. S. A.
Producer: U. S. Navy, in collaboration with Pathescope Company of America, New York.
Distribution: Navy Department, Bureau of Medicine and Surgery, Audio-Visual Training Section, Potomac Annex, Building 2, Room 304, Washington 25, D. C., **Loan.**

Summary: This highly entertaining and technically superb motion picture presents the problem of psychosomatic disorders, illustrates the relationship between normal emotional response and the development of psychogenic pain, and offers a positive therapeutic approach for the relief of symptoms. The material is medically sound, and in general is presented in logical sequence although there is a tendency toward oversimplification. Originally produced for group therapy use in the Navy, the film is adaptable to a variety of uses and audiences because it treats the subject in a straightforward, easy-to-follow manner, employing animation and "briefing" techniques which effect audience identification from the very beginning.

Audience: Patients (selected under supervision); psychiatrists, psychologists, general practitioners, students of medicine, psychiatric social workers, clinical psychologists, and nurses; nonprofessional audiences (with supervision).

Activity Group Therapy
16mm, black-and-white, sound, 1817 ft., 50 min.
Year of Production: 1949-50; **Country of Origin:** U. S. A.
Author: S. R. Slavson, Director of Group Therapy, Jewish Board of Guardians, New York; **Sponsor:** Nathan Hofheimer Foundation; **Producer:** Campus Film Productions, New York; **Camera:** Nat Campus.
Distribution: Columbia University Educational Films, 413 West 117th Street, New York 27, N. Y., **Sale:** $150; **Rental:** $10 (first day), $5 (second day), $2.50 (additional days).

Summary: The film shows in a general way the indications and selection of cases for Activity Group Therapy and, by means of concealed cameras, records most impressively the set-up and conduct of the therapeutic sessions and the personality developments which take place during the treatment of several emotionally disturbed boys. Although the effectiveness of the therapy is strikingly proved, its theory and practice are not adequately explained. On the other hand, the film provides excellent and unique material for the psychomorphological study of various types of personality disorder.

Audience: Psychiatrists, psychologists, psychiatric social workers, medical students. Interpretation by someone familiar with the technique of Activity Group Therapy is essential.

Medical Film Institute

The Medical Film Institute is searching for a few young physicians or medical scientists who have shown talent and interest in visual education. Such men have generally demonstrated their talents as artists, camera enthusiasts and occasionally as writers.

On the Medical Film Institute staff the status of the new personnel will be that of fellows in visual education. They will undergo formal and informal training in the skills of visual communication, while participating actively in the work of the organization. Placement after training will depend upon the nature of the skills of the particular person; there are many positions existent and to be created in the medical teaching centers. Salaries in the Institute will be determined according to prior experience and training in medicine, teaching and visual education.

For further information write to Dr. David S. Ruhe, Medical Film Institute, 20 E. 103rd Street, New York 29, N. Y.

Book News

Clinical Pediatric Urology
Meredith Campbell, M.S., M.D., F.A.C.S., Professor of Urology, New York University Post-Graduate Medical School; Elvira Goettsch, A.B., M.D., Associate Professor of Pediatrics, University of Southern California School of Medicine; and John D. Lyttle, A.B., M.D., Late Professor of Pediatrics, University of Southern California School of Medicine. W. B. Saunders Company, Philadelphia & London. 1951. Profusely Illustrated. 1113 pp., Including Index & Bibliographies. $18.00.

This volume of pediatric urology supercedes the previous two volume edition. In this field it retains a position as the standard reference.

The presentation of the material is personalized, yet adequately concerned with reports of current literature. The consideration of organic urologic disorders is excellent, as is the section on medical aspects of renal disease. A chapter on surgical procedures provides for complete coverage and renders the volume useful to surgeons as well as to general physicians and pediatricians.

In dealing with functional disorders, especially enuresis, there is evidence of weakness. Such statements as "It is important that the parents be told that the fault is primarily theirs" or, "but many children are simply lazy or perverse or wet the bed out of spite," would not be concurred in by those caring for emotionally disturbed children.

The defects are, however, minor where contrasted with the practical value of the book. It will be most useful for surgeons, general practitioners and pediatricians. Its comprehensive character would render it a useful reference—but not a text—for undergraduate students.

Julius B. Richmond, University of Illinois

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Human Physiology
Bernardo A. Houssay, M.D., Professor of Physiology, Director of the Institute of Biology and Experimental Medicine, Buenos Aires, and Associates. Translated by Juan T. Lewis, M.D., and Olive T. Lewis. Foreword by Herbert M. Evans, M.D. McGraw-Hill Book Company, Inc., New York. 1951. 1118 pp. $14.00.

Houssay's Textbook of HUMAN PHYSIOLOGY is a valuable addition to the field. It is translated and brought up-to-date from the original text first published in Argentina in 1945 by the Nobel prize winner Bernardo Houssay and collaborators. On the whole the presentation is clear and readable, and there are a number of illustrations which are helpful in the understanding of the complex subject matter. The book is quite up-to-date as far as texts go, though it does not include the most recent literature references. The bibliography is adequate and introduces a good deal of South American literature and some other foreign literature that is not too widely known in this country. It is well balanced and is especially good in the field of endocrinology and circulatory and renal physiology. The book presents a consistent point of view towards the material and problems of physiology that should be helpful to students. It does a reasonably good job of filling the role of a textbook in the educational process and presents a careful initial balance of fact, theory and analysis.

F. J. Mullin, Chicago Medical School

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Textbook of Physiology and Biochemistry
George H. Bell, M.D., Professor of Physiology, University of St. Andrews; J. Norman Davidson, M.D., D.Sc., Gardiner Professor of Physiological Chemistry, University of Glasgow; and Harold Scarborough, Ph.D., Professor of Medicine in the Welsh National School of Medicine, University of Wales. The Williams and Wilkins Company, Baltimore. 1950. 918 pp. $9.00.

In the preface, the authors point out "the desirability of collaboration in a book covering a wide field," particularly because of the growing specialization in evidence today. The present volume is an attempt to cover adequately but not completely the fields of biochemistry and physiology in a manner satisfactory for both disciplines.

The authors and publishers are particularly to be commended upon the clarity of type and authentic presentation of illustrations, both black-and-white and color. The organization of the material is all that could be desired in presentation of such a difficult dual topic. The textbook should serve very well in schools where careful coordination between the two departments can be obtained through careful scheduling of inter-departmental responsibilities.

In the reviewer's opinion, possibly some supplementary textbook assignment would be needed in case the text were chosen for the usual course in medical biochemistry, and this might also be true for physiology. On the other hand, if it is desired to give the student a clearer vision of the inter-relationships to be expected in these subjects, the book being reviewed would be an admirable choice.

The material presented in the text appears to be accurate in every detail.

D. Bailey Calvin, University of Texas Medical Branch

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Inhalation Anesthesia—2nd Edition
A Fundamental Guide. Arthur E. Guedel, M.D., Associate Clinical Professor of Surgery (Emeritus), University of Southern California School of Medicine. The Macmillan Company, New York. 1951. 144 pp. including Bibliography & Index. $3.75.

This small text represents the epitome of those facts which have been learned by practical experience with patients and by consultation with all the authorities in anesthesia. Guedel has

done a monumental work in bringing this small volume on inhalation anesthesia up to date. Each stage of anesthesia is illustrated by an appropriate case history culled from the author's wide experience. This book should be read by every medical student and should be read by, and be the personal property of, every physician who gives, or plans to give, an anesthetic agent.

C. C. Pfeiffer, University of Illinois

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Metabolic Methods

Clinical Procedures in the Study of Metabolic Functions. C. Frank Consolazio, Chief of Biochemistry, United States Army Medical Nutrition Laboratory, Chicago; Robert E. Johnson, M.D., D.Phil. (Oxford), Professor of Physiology, University of Illinois, Urbana; and Evelyn Marek, M.A., Biochemist, United States Army Medical Nutrition Laboratory, Chicago. The C. V. Mosby Company, St. Louis. 1951. Illustrated. 471 pp. including Index. $6.75.

This book is just what its title announces it to be, a manual containing selected methods commonly employed in studies of metabolic function. A standardized form of presentation has been followed in giving detailed descriptions of the methods. Commonly only one method of analysis for each substance and only one procedure are given. Presumably the most feasible methods for use in the field and in the experimental and clinical laboratory have been chosen. The scope of the book is extensive. It is comprised of several subdivided sections which deal with a) storage of specimens; b) the nature and methods of operating instruments; c) biochemical procedures to be followed in assay of minerals, nitrogenous compounds, foods, vitamins, hormones, enzymes; d) microbiological procedures for routine analysis of vitamins and amino acids; e) physiological measurements of blood gases, respiratory gases, respiratory metabolism, plasma blood and extracellular fluid volumes. The final two sections deal with methods useful in the field in metabolic wards and in clinical laboratories. Extensive references and a series of tables are also included. Although there are methods in common use which are not included in this manual, it certainly is an extremely useful and complete reference book. The excellent organization permits the methods to be followed with minimum difficulty. It is recommended as a volume which should be available to all biochemical, physiological and clinical laboratories.

Chandler McC. Brooks, State University of New York

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A Color Atlas of Morphologic Hematology

With a guide to Clinical Interpretation

Geneva A. Daland, B.S., Chief Laboratory Assistant in Hematology, Thorndike Memorial Laboratory, Research Laboratory Technician, Boston City Hospital; Thomas Hale Ham, M.D., Editor, Assistant Professor of Medicine, Harvard Medical School, Associate Director, Thorndike Memorial Laboratory, Junior Visiting Physician, Boston City Hospital; Etta Piotti, Illustrator. Harvard University Press, Cambridge, Mass., 1951. 74 pp. with Index and Bibliography. $5.00.

This volume is a meticulously prepared manual for use in applying methods of blood staining for clinical purposes. The text is brief, clear and intelligent. The diagrams, while purposely simplified, are of great value in abetting textual matter, and the color plates are excellent. No attempt is made to discuss in detail theories regarding the origin of blood cells. The process of Wright staining is explained, as is the process of counterstaining. The book is recommended as a reference manual for students, technicians and clinicians.

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Proceedings of the First Research Conference on Psychosurgery

Criteria for the Selection of Psychotic Patients for Psychosurgery. Held in New York, N. Y. November 17 and 18, 1949. Fred A. Mettler, M.D., Ph.D., Chairman; Newton Bigelow, M.D., Editor. Federal Security Agency, Public Health Service Publication No. 16. Available from: The Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 173 pp. Illustrated, 4 Appendices. $1.00.

By gathering together experts from all the fields impinging on psychosurgery, the National Institute of Mental Health was able to produce a stimulating conference about a controversial subject. Taking part were representatives of law, social service organizations, psychiatry, psychosurgery, and other groups. The conference reached few specific conclusions, but did succeed in defining the wide fields for examination and in exploring the interrelationships involved. Since the volume consists of a transcript of proceedings, it is not as well organized as a textbook might be, but there is a richer matrix which most texts do not achieve.

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Medical Photography—4th Edition

T. A. Longmore, Hon. F.S.R., Principal, Kodak School of Medical Radiography and Clinical Photography, Hon. Editor of "Radiography". Member of Council, Education Committee and Board of Examiners of the Society of Radiographers, Late Senior Instructor in Radiographic and Medical Photography at the Royal Army Medical College. With a foreword by: Brigadier D. B. McGrigor, O.B.E., M.B., Ch.B., D.M.R.E., Hon.F.S.R. Consulting Radiologist, The War Office, President, British Institute of Radiology 1939-42. Fourth Edition. The Focal Press, New York. 1949. 1,008 pp. including Index and Bibliography. Illustrations. $12.50.

Described by the publishers as "the only comprehensive work on Medical Photography in any language," the book should be invaluable for use as a reference work, as a text for beginners in medical photography, and as an orientation work for anyone interested in the myriad problems involved in the production of good medical illustrations.

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The Organization of Bones

P. Lacroix, Professor in the Faculty of Medicine, University of Louvain. Translated from the Amended French Edition by Stewart Gilder, B.Sc., M.B., Assistant Editor, Abstracts of World Medicine. The Blakiston Company, Philadelphia, 1951. 67 Illustrations. 235 pp. with Index and Bibliography. $6.00.

This is an excellent monograph devoted to the dynamics of skeletal development. The author makes no attempt to write a textbook, but the development is lucid and logical, actually a handy instrument for teaching purposes. While most of the discussion is based on

histological and x-ray techniques, the author does not ignore work that has been done on osteogenesis by biochemists. An excellent bibliography is included.

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Experiment in Dental Care

Results of New Zealand's Use of School Dental Nurses. J. T. Fulton. World Health Organization, Palais des Nations, Geneva. 87 pp. including Tables and References. $1.00.

What ways and means can best solve the huge and almost universal problem of proper dental care? Under a grant from the World Health Organization, Dr. Fulton, dental services adviser to the Children's Bureau, undertook observation and study of New Zealand's use of "school dental nurses," a government sponsored program initiated in the 1920's. A brief review of existing dental conditions among New Zealand school children is followed by a statement of the objectives and policy of the government's program, its administration and costs. The training of the dental nurses, and a survey of the extent and quality of the treatment given by them, has led Dr. Fulton to a favorable conclusion as to the over-all merit of the program. He is, however, careful at the outset to point out some of the limitations of this forty day survey, e.g.: "he has made no attempt to evaluate the program in terms of what is ideal for the individual child nor the results of the program beyond the age of fourteen years."

This report rates a careful reading by all interested in the problem of increasing dental services.

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Acoustical Terminology

Sponsor: Acoustical Society of America, in cooperation with The Institute of Radio Engineers, Inc., American Standards Association Incorporated, New York. 1951. 50 pp. including Index. $1.50.

A fairly radical revision of the 1942 edition of the American Standard. The work was revised with the aid of an expert committee.

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Psychological Dynamics of Health Education

Proceedings of the Eastern States Health Education Conference, April 13-14, 1950. Columbia University Press, New York. 1951. 134 pp. $2.50.

Taking as their starting point the inherent relationship of motivation to effectiveness in efforts at health education, the members of the conference proceeded to deal with aspects of the various individual and group factors concerned. The book is a compilation of articles by the members, each an authority in his field, and is pertinent to many problems, taking care to consider practicable usage in direct, down-to-earth language.

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Psychology and Its Bearing on Education

C. W. Valentine, M.A., D.Phil., Emeritus Professor of Education in the University of Birmingham. Philosophical Library Inc., New York, New York. 1951. 674 pp. with Index of Subjects, and Appendix. $6.00.

This book may be used most properly as a layman's reference work in psychology, or possibly as an introductory text for students interested in the subject as an elective course. The writing is as non-technical as it can possibly be made. A short appendix dealing with statistics is included.

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Discriminations in Higher Education

A Report of the Midwest Educators Conference in Chicago, Illinois, November 3-4, 1950. Edited by Francis J. Brown, Floyd W. Reeves and Richard B. Anliot. American Council on Education, Washington, D. C. 1951. 80 pp. $1.00.

"The truths inscribed on our hearts are, I think, the truths of the Declaration of Independence, which include the proposition that all men are created equal. The task that we have on a world scale is not merely to repeat these propositions, but to show this truth . . . . . in those institutions which are dedicated to the propagation of our ideals, namely, our institutions of higher learning." These words of Robert M. Hutchins characterize the substance of the conference reported in this volume. Using as their starting point a frank examination of the admissions practices of their own institutions, the members of the conference produced a stimulating and fruitful symposium which deserves to be read by every administrator in higher education.

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An Experiment in International Cultural Relations

A Report of the Staff of the Commission on the Occupied Areas. Harold E. Snyder and George E. Beauchamp. American Council on Education, Washington, D. C. 1951. 112 pp. $1.50.

This is a report by the director and associate director of the Commission on the Occupied Areas, appointed in the summer of 1948 by the American Council on Education. A model final report, the volume calls for a continuation of the work which the commission began. Working with both governmental and private agencies, the commission had an important influence in our relationships with countries under United States occupation.

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The Sonnets of Shakespeare—A Psycho-Sexual Analysis

H. McClure Young, 217 Exchange National Bank Building, Columbia, Missouri. The George Banta Publishing Company, Menasha, Wisconsin. 1937. 121 pp. $2.00.

Shakespeare's sonnets have always had a fascination for interpreters of all sorts, if only because they are universally recognized as the most exalted poetry in the English language. The author of this volume makes a very sensible case for discounting some of the sillier psycho-sexual critics. He uses as his weapons a well-grounded scholarship both in the literature of the English renaissance and in sexual psychology. The flaws in the book arise from the almost necessary neglect of certain Elizabethan literary conventions which would have dispelled many of the alleged mysteries without argument.

Nobel—The Man and His Prizes
Edited by the Nobel Foundation. University of Oklahoma Press, Norman, Oklahoma. 1951. Illustrated. 620 pp. including Index. $6.00.

The volume is a very well produced book that should be of considerable value to anyone interested in the workings of the world's most famous prize awarding foundation, its founder, and the winners of Nobel awards. There is a long, well detailed section dealing with the history of the prize in physiology and medicine which should especially appeal to readers of the JOURNAL.

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The Odyssey of Modern Drug Research
Pharmaceutical Manufacture—Its Science and Economics. Robert Burlingham. The Upjohn Company, Kalamazoo, Michigan. 1951. Profusely Illustrated. 125 pp.

In every respect this work is a first-rate production. The text is a clear account of the past 15 years of the pharmaceutical industry in the United States, as told in terms of some of its outstanding contributions.

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Proceedings of the 44th Annual Meeting
Life Insurance Association of America. (including 1950 Spring Meeting). Available from Life Insurance Association of America, 488 Madison Avenue, New York 22, New York. December 7, 1950. 171 pp. including Index.

This booklet is extremely interesting in the way it throws light on the ramifications of the insurance industry as they affect national policy and economy. From the reports printed in this volume, it is possible to follow the operation of some of the nation's most effective public relations and lobbying campaigns. There are also some extremely interesting comments made on industry and finance, particularly in the speech of General George F. Doriot.

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Books Received

As space permits, those with the greatest interest to our readers will be reviewed.

New and Nonofficial Remedies—1951
Issued under the Direction and Supervision of The Council on Pharmacy and Chemistry, American Medical Association. J. B. Lippincott Company, Philadelphia, London. 1951. 782 pp., including Index and Bibliography. $3.00.

A Textbook of Medicine
Edited by E. Noble Chamberlain; contents compiled by 13 contributors. The Williams and Wilkins Company, Baltimore. 1951. 266 Illustrations, some in Color. 962 pp. including Index. $10.00.

Human Biochemistry—3rd Edition
Israel S. Kleiner, Ph.D., Professor of Biochemistry, New York Medical College. The C. V. Mosby Company, Saint Louis. 1951. 83 Text Illustrations, 5 Color Plates. 695 pp., including Index. $7.00.

The Child Unborn
R. J. Harrison, M.A., D.Sc., M.B., B.Chir., F.L.S., Reader in Anatomy, University of London, at Charing Cross Hospital Medical School. The Macmillan Company, New York. 1951. 60 Text Illustrations. 226 pp., including Bibliography and Index. $3.00.

Applied Anatomy for Nurses
E. J. Bocock, S.R.N., S.C.M., D.N., Sister Tutor Certificate, King's College of Household and Social Science; and R. Wheeler Haines, M.B., D.Sc., F.L.S., Professor of Anatomy, Medical School, Abbassia, Cairo. The Williams and Wilkins Company, Baltimore. 1951. Illustrated. 320 pp. including Index. $3.50.

Internal Medicine—5th Edition
Its Theory and Practice. Originally edited by John H. Musser, B.S., M.D., F.A.C.P., Late Professor of Medicine, Tulane University of Louisiana, School of Medicine. 5th Edition edited by Michael G. Wohl, M.D., F.A.C.P., Associate Professor of Medicine, Temple University School of Medicine. 60 Contributors. Lea and Febiger, Philadelphia. 1951. 236 Text Illustrations; 10 Plates in Color. 1,563 pp., including Index. $15.00.

A Textbook of Clinical Neurology—3rd Edition
J. M. Nielsen, B.S., M.D., F.A.C.P., Clinical Professor of Neurology and psychiatry, University of Southern California. Paul B. Hoeber, Inc.; Medical Department of Harper & Brothers, New York. 1951. 212 Illustrations. 709 pp., including Index and Bibliography. $10.00.

Medical Terminology Made Easy
JeHarned, Instructor in Medical Record Library Science and Medical Record Librarian, Duke University School of Medicine. Physicians' Record Company, Chicago. 1951. 275 pp., including Index. $5.00.

Global Epidemiology
A Geography of Disease and Sanitation. Volume Two—Africa and the Adjacent Islands. James Stevens Simmons, B.S., M.D., Ph.D., Dr. P.H., Sc.D. (Hon.), Dean and Professor of Public Health, Harvard University School of Public Health; Tom F. Whayne, A.B., M.D., M.P.H., Dr. P.H., Mayo Professor and Director, School of Public Health, University of Minnesota; Harold Maclachlan Horack, B.S., M.D., Instructor in Medicine, Tulane University School of Medicine; Associate Author, Ruth Alida Thomas, A.B., M.A., M.P.H., Research Associate, School of Public Health, University of Minnesota, Instructor, Department of Tropical Public Health, Harvard University School of Public Health; and Collaborators. J. B. Lippincott Company, Philadelphia and London. 1951. 652 pp. including Index and Chapter Bibliographies. $15.00.

Administrative Medicine
Reprinted from Nelson Loose-Leaf Medicine. Edited by Haven Emerson, A.M., M.D., Professor Emeritus of Public Health, College of Physicians and Surgeons, Columbia University. 57 Contributors. Thomas Nelson and Sons, Edinburgh and New York. 1951. 1,007 pp., including Index and Chapter Bibliographies. $10.00.

The Will to Live
Arnold A. Hutschnecker, M.D., Thomas Y. Crowell Co., 278 pp., $3.50.

Lutte Antipaludique
Par Les Insecticides A Action Remanente. Dr. E. J. Pampana. Organisation Mondiale De La Sante, Palais Des Nations, Geneve. 1951. 72 pp., including Bibliography. (In French). $1.00.

Report of the Governor's Study Commission
On The Deviated Sex Offender. Mr. Donald M. D. Thurber, Executive Director of the Commission. The State of Michigan. 1951. 245 pp., including Appendix and Bibliography.

Annual Epidemiological and Vital Statistics—1939-1946
Part I—Vital Statistics and Causes of Death. World Health Organization, Palais des Nations, Geneva. 124 pp. including English and French Indices. (Printed in English and French). $4.00.

Pamphlets Received

Emergency Action to Save Lives; Fire Fighting for Householders; Atomic Blast Creates Fire. Official Civil Defense Publications. 1st Two: 5c ea.; Latter Pamphlet; $1.50 per 100 copies. For Sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

General Medical Care Programs Administered by Local Health Departments. Published by and Available from the American Public Health Assn., P. O. Box 5998, Bethesda, Maryland. 50c.

International Sanitary Regulations; World Health Organization Regulations No. 2. Technical Report Series No. 41. English Edition. Available from the World Health Organization, Palais des Nations, Geneva, Switzerland; and from the International Documents Service, Columbia University Press, New York 27, New York. 65c.

An Annotated Bibliography of Group Practice —1927-1950 Bulletin 85 (Revised Edition of Bulletin 63). Prepared by the Bureau of Medical Economic Research, American Medical Association, Chicago 10, Illinois.

Medical Group Practice in the United States. A Summary of Recent Published Material and Supplementary Unpublished Data on Fees and Volume of Work. G. Halsey Hunt, M.D., and Marcus S. Goldstein, M.D. Federal Security Agency, Division of Public Health Methods. Public Health Service Publication No. 77. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 25c.

How Shall We Pay for Health Care? Oscar R. Ewing and George F. Lull, M.D. Public Affairs Pamphlet No. 152. Public Affairs Committee, Inc., 22 East 38th Street, New York 16, New York. 20c.

A Survey of Accidents and Health Coverage in the United States. As of December 31, 1950. Prepared by the Survey Committee of The Health Insurance Council. Institute of Life Insurance, 488 Madison Avenue, New York 22, New York.

Health Insurance Plans in the United States. Report of the Committee on Labor and Public Welfare, United States Senate (Clark Report). United States Government Printing Office, Washington, D. C.

LEA & FEBIGER BOOKS

Soffer—Diseases of the Endocrine Glands

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New. 383 Pages. Illustrated. $6.50

Wintrobe—Clinical Hematology

By MAXWELL M. WINTROBE, M.D., Ph.D.

Professor of Medicine and Director, Laboratory for the Study of Hereditary and Metabolic Disorders, University of Utah, College of Medicine, Salt Lake City, Utah

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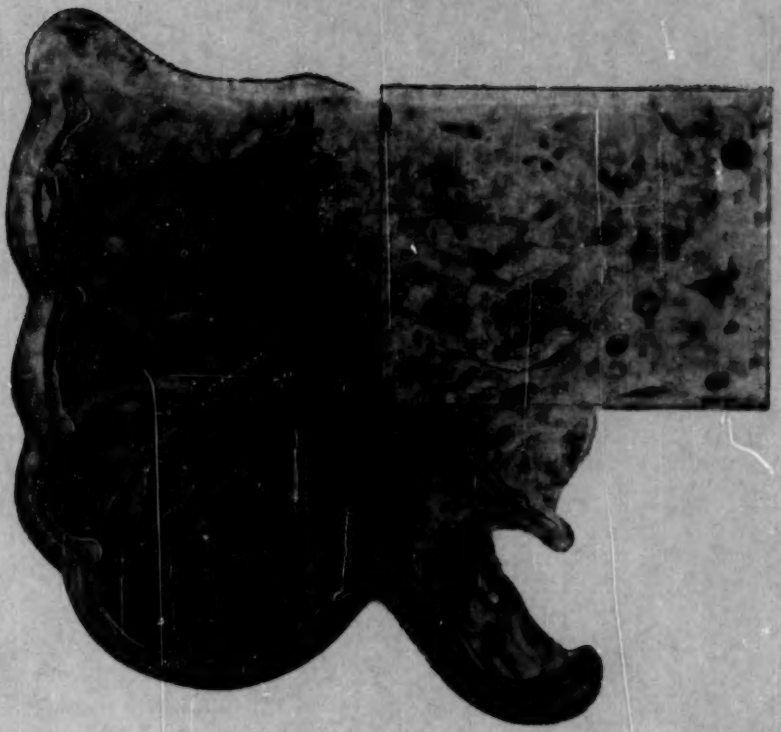

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Most, H.; Tobie, J. K.; Braisovich, J., and Reardon, L. V.: cited in Pub. Health Rep. 65:1684 (Dec.) 1950.

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